Palindromic-Type Pandigital Patterns in Pythagorean Triples - I

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Abstract

This paper brings examples of **Palindromic-Type Pandigital Patterns in Pythagorean Triples**. These are constructed in a padronized way. This means that in all the patterns we have **pandigital palindromic-type** expressions. The only change appears is in the middle term and last numbers in the first and third values. The results are obtained in such a way that we have total values as: 9, 99, 999, 9999, 99999, etc. The construction is based on a procedure well known in the literature. There is very much uniformity among the results.

Contents

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1   Procedure

Let's consider the following three functions:

$$F(m,n) := m^2 - n^2$$
$$G(m,n) := 2mn$$
$$H(m,n) := m^2 + n^2 \tag{1.1}$$

Then we can easily check that

$$
\begin{aligned}
F(m,n)^2 + G(m,n)^2 &= \left(m^2 - n^2\right)^2 + (2mn)^2 \\
&= m^4 - 2m^2n^2 + n^4 + 4m^2n^2 \\
&= m^4 + 2m^2n^2 + n^4 \\
&= \left(m^2 + n^2\right)^2 = H(m,n)^2.
\end{aligned}
$$

This proves that the triple (F, G, H) is a **Pythagorean triple**. The Procedure (1.1) is very famous in the literature [1]. Some patterned examples based on the Procedure (1.1) are studied by author [6]. Some particular cases are as follows:

$$
\begin{aligned}
(F(3,2), G(3,2), H(3,2)) &\Rightarrow (5, 12, 13) \\
(F(4,2), G(4,2), H(4,2)) &\Rightarrow (12, 16, 20) \\
(F(5,2), G(5,2), H(5,2)) &\Rightarrow (21, 20, 29) \\
(F(6,2), G(6,2), H(6,2)) &\Rightarrow (32, 24, 40) \\
(F(9,3), G(9,3), H(9,3)) &\Rightarrow (72, 54, 90) \\
(F(9,7), G(9,7), H(9,7)) &\Rightarrow (32, 126, 130) \\
(F(10,9), G(10,9), H(10,9)) &\Rightarrow (19, 180, 181)
\end{aligned}
$$

The aim of this work is to write **Palindromic-Type Pandigital Patterns in Pythagorean Triples**. This we have done in three different ways. First way give 9 patterns, second way give 99 patterns, and the third way give 999 patterns. All the patterns are very much similar in terms of palindromic-type pandigital patterns. This similarity we call as **"uniformity of results"**. This uniformity is explain in the following section.

2   Uniformity of Results

In order to get **Palindromic-Type Pandigital Patterns in Pythagorean Triples**, the following pattern appears automatically in the beginning of each part:

$$
\begin{aligned}
99^2 + 20^2 &= 101^2 &&:= 10201 \\
9999^2 + 200^2 &= 10001^2 &&:= 100020001 \\
999999^2 + 2000^2 &= 1000001^2 &&:= 1000002000001 \\
99999999^2 + 20000^2 &= 100000001^2 &&:= 10000000200000001 \\
9999999999^2 + 200000^2 &= 10000000001^2 &&:= 100000000020000000001 \\
999999999999^2 + 2000000^2 &= 1000000000001^2 &&:= 1000000000002000000000001
\end{aligned} \tag{2.1}
$$

The above pattern is obtained by considering $n = 1$; $m = 9, 99, 999, 9999, 99999, ...$ in following Procedure:

$$
\begin{aligned}
F_1(m, n) &:= m(2n + m) \\
G_1(m, n) &:= 2n(n + m) \\
H_1(m, n) &:= m^2 + 2mn + 2n^2
\end{aligned} \tag{2.2}
$$

More details on the Procedures given in (1.1) and (2.2) can be seen in Taneja [5, 6]. We shall show below as an idea how each row is connected with our results. We get total number of result in each case given as below:

Line 1 $\Rightarrow$ Total patterns: 9
Line 2 $\Rightarrow$ Total patterns: 99
Line 3 $\Rightarrow$ Total patterns: 999
Line 4 $\Rightarrow$ Total patterns: 9999
Line 5 $\Rightarrow$ Total patterns: 99999
$\cdots$ $\cdots$ $\cdots$ $\cdots$ $\cdots$ $\cdots$

Let's see how it works in each subsection below:

2.1   First Line

Let's consider

$$m = 10, 110, 1110, 11110, 111110, 1111110, 11111110, 111111110, 1111111110$$

in (1.1), then for $n = 1$ and $n = 9$, we have the first and the last *palindromic-type pandigital Pythagorean patterns* given below:

▶   **First Pattern**

$$
\begin{aligned}
099^2 + 20^2 &= \mathbf{1}\,01^2 \\
\mathbf{12}\,099^2 + 220^2 &= \mathbf{121}\,01^2 \\
\mathbf{1232}\,099^2 + 2220^2 &= \mathbf{12321}\,01^2 \\
\mathbf{123432}\,099^2 + 22220^2 &= \mathbf{1234321}\,01^2 \\
\mathbf{12345432}\,099^2 + 222220^2 &= \mathbf{123454321}\,01^2 \\
\mathbf{1234565432}\,099^2 + 2222220^2 &= \mathbf{12345654321}\,01^2 \\
\mathbf{123456765432}\,099^2 + 22222220^2 &= \mathbf{1234567654321}\,01^2 \\
\mathbf{12345678765432}\,099^2 + 222222220^2 &= \mathbf{123456787654321}\,01^2 \\
\mathbf{1234567898765432}\,099^2 + 2222222220^2 &= \mathbf{12345678987654321}\,01^2
\end{aligned} \tag{2.3}
$$

▶ **Last Pattern**

$$019^2 + 180^2 \qquad = \mathbf{1}\,81^2$$
$$\mathbf{12}\,019^2 + 1980^2 \qquad = \mathbf{121}\,81^2$$
$$\mathbf{1232}\,019^2 + 19980^2 \qquad = \mathbf{12321}\,81^2$$
$$\mathbf{123432}\,019^2 + 199980^2 \qquad = \mathbf{1234321}\,81^2$$
$$\mathbf{12345432}\,019^2 + 1999980^2 \qquad = \mathbf{123454321}\,81^2$$
$$\mathbf{1234565432}\,019^2 + 19999980^2 \qquad = \mathbf{12345654321}\,81^2$$
$$\mathbf{123456765432}\,019^2 + 199999980^2 \qquad = \mathbf{1234567654321}\,81^2$$
$$\mathbf{12345678765432}\,019^2 + 1999999980^2 \qquad = \mathbf{123456787654321}\,81^2$$
$$\mathbf{1234567898765432}\,019^2 + 1999999980^2 = \mathbf{12345678987654321}\,81^2 \qquad (2.4)$$

Below are some remarks based on above two patterns:

Remark 1. *(i) The **first line** of first pattern (2.3) is the **first line** as given in pattern (2.1), i.e.,*

$$99^2 + 20^2 = 101^2.$$

*(ii) The **last two digits** follow the square of as of numbers, i.e.,*

$$01 = 1^2, \ 04 = 2^2, \ \dots, 81 = 9^2.$$

*(iii) The sum of the **last two digits** of first and third members of each line is same, i.e.,*

$$
\begin{aligned}
n = 1 \quad &\Rightarrow \quad 99 + 01 = 100 \\
n = 2 \quad &\Rightarrow \quad 96 + 04 = 100 \\
n = 3 \quad &\Rightarrow \quad 91 + 09 = 100 \\
n = 4 \quad &\Rightarrow \quad 84 + 16 = 100 \\
n = 5 \quad &\Rightarrow \quad 75 + 25 = 100 \\
n = 6 \quad &\Rightarrow \quad 64 + 36 = 100 \\
n = 7 \quad &\Rightarrow \quad 51 + 49 = 100 \\
n = 8 \quad &\Rightarrow \quad 19 + 64 = 100 \\
n = 9 \quad &\Rightarrow \quad 19 + 81 = 100
\end{aligned}
$$

For details see the Section 3.

2.2 Second Line

Let's consider

$$m = 100, \ 1100, \ 11100, \ 111100, \ 1111100, \ 11111100, \ 111111100, \ 1111111100, \ 11111111100$$

in (1.1), then for $n = 1$ and $n = 999$, we have the first and the last *palindromic-type pandigital Pythagorean patterns* given below:

▶ **First Pattern**

$$
\begin{aligned}
09999^2 + 200^2 &= \mathbf{1}\,0001^2 \\
\mathbf{12}\,09999^2 + 2200^2 &= \mathbf{121}\,0001^2 \\
\mathbf{1232}\,09999^2 + 22200^2 &= \mathbf{12321}\,0001^2 \\
\mathbf{123432}\,09999^2 + 222200^2 &= \mathbf{1234321}\,0001^2 \\
\mathbf{12345432}\,09999^2 + 2222200^2 &= \mathbf{123454321}\,0001^2 \\
\mathbf{1234565432}\,09999^2 + 22222200^2 &= \mathbf{12345654321}\,0001^2 \\
\mathbf{123456765432}\,09999^2 + 222222200^2 &= \mathbf{1234567654321}\,0001^2 \\
\mathbf{12345678765432}\,09999^2 + 2222222200^2 &= \mathbf{123456787654321}\,0001^2 \\
\mathbf{1234567898765432}\,09999^2 + 22222222200^2 &= \mathbf{12345678987654321}\,0001^2
\end{aligned}
\tag{2.5}
$$

▶ **Last Pattern**

$$
\begin{aligned}
00199^2 + 19800^2 &= \mathbf{1}\,9801^2 \\
\mathbf{12}\,00199^2 + 217800^2 &= \mathbf{121}\,9801^2 \\
\mathbf{1232}\,00199^2 + 2197800^2 &= \mathbf{12321}\,9801^2 \\
\mathbf{123432}\,00199^2 + 21997800^2 &= \mathbf{1234321}\,9801^2 \\
\mathbf{12345432}\,00199^2 + 219997800^2 &= \mathbf{123454321}\,9801^2 \\
\mathbf{1234565432}\,00199^2 + 2199997800^2 &= \mathbf{12345654321}\,9801^2 \\
\mathbf{123456765432}\,00199^2 + 21999997800^2 &= \mathbf{1234567654321}\,9801^2 \\
\mathbf{12345678765432}\,00199^2 + 219999997800^2 &= \mathbf{123456787654321}\,9801^2 \\
\mathbf{1234567898765432}\,00199^2 + 2199999997800^2 &= \mathbf{12345678987654321}\,9801^2
\end{aligned}
\tag{2.6}
$$

In this case, we observe that the second term in the first line doesn't give good pattern. It happens with many results. Below are some remarks based on above two patterns:

Remark 2.   *(i) The **first line** of first pattern (2.5) is the **second line** as given in pattern (2.1), i.e.,*

$$9999^2 + 200^2 = 10001^2.$$

*(ii) The **last four digits** follow the square of as of numbers, i.e.,*

$$0001 = 1^2,\ 0004 = 2^2,\ \dots,\ 9801 = 99^2.$$

*(iii) The sum of the **last four digits** of first and third members of each line is same, i.e.,*

$$
\begin{aligned}
n = 1 &\quad \Rightarrow \quad 9999 + 0001 = 10000 \\
n = 2 &\quad \Rightarrow \quad 9996 + 0004 = 10000 \\
n = 3 &\quad \Rightarrow \quad 9991 + 0009 = 10000 \\
n = 4 &\quad \Rightarrow \quad 9984 + 0016 = 10000 \\
&\quad \cdots \quad\quad\quad \cdots \quad \cdots \quad \cdots \\
&\quad \cdots \quad\quad\quad \cdots \quad \cdots \quad \cdots \\
n = 97 &\quad \Rightarrow \quad 0591 + 9409 = 10000 \\
n = 98 &\quad \Rightarrow \quad 0396 + 9604 = 10000 \\
n = 99 &\quad \Rightarrow \quad 0199 + 9801 = 10000
\end{aligned}
$$

For details see the Section 4.

2.3 Third Line

Let's consider

$$m = 1000,\ 11000,\ 111000,\ 1111000,\ 11111000,\ 111111000,\ 1111111000,\ 11111111000,\ 111111111000$$

in (1.1), then for $n = 1$ and $n = 999$, we have the first and the last *palindromic-type pandigital Pythagorean patterns* given below:

▶ **First Pattern**

$$
\begin{aligned}
0999999^2 + 2000^2 &= \mathbf{1}\,000001^2 \\
\mathbf{12}\,0999999^2 + 22000^2 &= \mathbf{121}\,000001^2 \\
\mathbf{1232}\,0999999^2 + 222000^2 &= \mathbf{12321}\,000001^2 \\
\mathbf{123432}\,0999999^2 + 2222000^2 &= \mathbf{1234321}\,000001^2 \\
\mathbf{12345432}\,0999999^2 + 22222000^2 &= \mathbf{123454321}\,000001^2 \\
\mathbf{1234565432}\,0999999^2 + 222222000^2 &= \mathbf{12345654321}\,000001^2 \\
\mathbf{123456765432}\,0999999^2 + 2222222000^2 &= \mathbf{1234567654321}\,000001^2 \\
\mathbf{12345678765432}\,0999999^2 + 22222222000^2 &= \mathbf{123456787654321}\,000001^2 \\
\mathbf{1234567898765432}\,0999999^2 + 222222222000^2 &= \mathbf{12345678987654321}\,000001^2 && (2.7)
\end{aligned}
$$

▶ **Last Pattern**

$$
\begin{aligned}
0001999^2 + 1998000^2 &= \mathbf{1}\,998001^2 \\
\mathbf{12}\,0001999^2 + 21978000^2 &= \mathbf{121}\,998001^2 \\
\mathbf{1232}\,0001999^2 + 221778000^2 &= \mathbf{12321}\,998001^2 \\
\mathbf{123432}\,0001999^2 + 2219778000^2 &= \mathbf{1234321}\,998001^2 \\
\mathbf{12345432}\,0001999^2 + 22199778000^2 &= \mathbf{123454321}\,998001^2 \\
\mathbf{1234565432}\,0001999^2 + 221999778000^2 &= \mathbf{12345654321}\,998001^2 \\
\mathbf{123456765432}\,0001999^2 + 2219999778000^2 &= \mathbf{1234567654321}\,998001^2 \\
\mathbf{12345678765432}\,0001999^2 + 22199999778000^2 &= \mathbf{123456787654321}\,998001^2 \\
\mathbf{1234567898765432}\,0001999^2 + 221999999778000^2 &= \mathbf{12345678987654321}\,998001^2 && (2.8)
\end{aligned}
$$

In this case, we observe that the second term in the first line doesn't give good pattern. It happens with many results. Below are some remarks based on above two patterns:

Remark 3.   *(i) The **first line** of first pattern (2.7) is the **third line** as given in pattern (2.1), i.e.,*

$$999999^2 + 2000^2 = 1000001^2.$$

*(ii) The **last six digits** follow the square of as of numbers, i.e.,*

$$000001 = 1^2,\ 000004 = 2^2,\ \dots,999801 = 999^2.$$

*(iii) The sum of the **last six digits** of first and third members of each line is same, i.e.,*

$$
\begin{aligned}
n &= 1 & \Rightarrow && 999999 + 000001 &= 1000000 \\
n &= 2 & \Rightarrow && 999996 + 000004 &= 1000000 \\
n &= 3 & \Rightarrow && 999991 + 000009 &= 1000000 \\
n &= 4 & \Rightarrow && 999984 + 000016 &= 1000000 \\
&\cdots & && \cdots \quad \cdots \quad \cdots \quad \cdots \\
&\cdots & && \cdots \quad \cdots \quad \cdots \quad \cdots \\
n &= 997 & \Rightarrow && 005991 + 994009 &= 1000000 \\
n &= 998 & \Rightarrow && 003996 + 996004 &= 1000000 \\
n &= 999 & \Rightarrow && 001999 + 998001 &= 1000000.
\end{aligned}
$$

For details see the Section 5.

2.4 Forth Line

Let's consider

$m = 10000, 110000, 1110000, 11110000, 111110000, 1111110000, 11111110000, 111111110000, 1111111110000$

in (1.1), then for $n = 1$ and $n = 9999$, we have the first and the last *palindromic-type pandigital Pythagorean patterns* given below:

▶ **First Pattern**

$$
\begin{aligned}
099999999^2 + 20000^2 &= \mathbf{1}\,00000001^2 \\
\mathbf{12}\,099999999^2 + 220000^2 &= \mathbf{121}\,00000001^2 \\
\mathbf{1232}\,099999999^2 + 2220000^2 &= \mathbf{12321}\,00000001^2 \\
\mathbf{123432}\,099999999^2 + 22220000^2 &= \mathbf{1234321}\,00000001^2 \\
\mathbf{12345432}\,099999999^2 + 222220000^2 &= \mathbf{123454321}\,00000001^2 \\
\mathbf{1234565432}\,099999999^2 + 2222220000^2 &= \mathbf{12345654321}\,00000001^2 \\
\mathbf{123456765432}\,099999999^2 + 22222220000^2 &= \mathbf{1234567654321}\,00000001^2 \\
\mathbf{12345678765432}\,099999999^2 + 222222220000^2 &= \mathbf{123456787654321}\,00000001^2 \\
\mathbf{1234567898765432}\,099999999^2 + 2222222220000^2 &= \mathbf{12345678987654321}\,00000001^2 \quad (2.9)
\end{aligned}
$$

▶ **Last Pattern**

$$
\begin{aligned}
000019999^2 + 199980000^2 &= \mathbf{1}\,99980001^2 \\
\mathbf{12}\,000019999^2 + 2199780000^2 &= \mathbf{121}\,99980001^2 \\
\mathbf{1232}\,000019999^2 + 22197780000^2 &= \mathbf{12321}\,99980001^2 \\
\mathbf{123432}\,000019999^2 + 222177780000^2 &= \mathbf{1234321}\,99980001^2 \\
\mathbf{12345432}\,000019999^2 + 2221977780000^2 &= \mathbf{123454321}\,99980001^2 \\
\mathbf{1234565432}\,000019999^2 + 22219977780000^2 &= \mathbf{12345654321}\,99980001^2 \\
\mathbf{123456765432}\,000019999^2 + 222199977780000^2 &= \mathbf{1234567654321}\,99980001^2 \\
\mathbf{12345678765432}\,000019999^2 + 2221999977780000^2 &= \mathbf{123456787654321}\,99980001^2 \\
\mathbf{1234567898765432}\,000019999^2 + 22219999977780000^2 &= \mathbf{12345678987654321}\,99980001^2 \quad (2.10)
\end{aligned}
$$

In this case, we observe that the second term in the first line doesn't give good pattern. It happens with many results. Below are some remarks based on above two patterns:

Remark 4.   *(i) The **first line** of first pattern (2.9) is the **forth line** as given in pattern (2.1), i.e.,*

$$99999999^2 + 20000^2 = 100000001^2.$$

*(ii) The **last eight digits** follow the square of as of numbers, i.e.,*

$$00000001 = 1^2, \ 00000004 = 2^2, \ \dots, 99980001 = 9999^2.$$

*(iii) The sum of the **last eight digits** of first and third members of each line is same, i.e.,*

$$
\begin{array}{lll}
n = 1 & \Rightarrow & 99999999 + 00000001 = 100000000 \\
n = 2 & \Rightarrow & 99999996 + 00000004 = 100000000 \\
n = 3 & \Rightarrow & 99999991 + 00000009 = 100000000 \\
n = 4 & \Rightarrow & 99999984 + 00000016 = 100000000 \\
\dots & & \dots \quad \dots \quad \dots \quad \dots \\
\dots & & \dots \quad \dots \quad \dots \quad \dots \\
n = 9997 & \Rightarrow & 00059991 + 99940009 = 100000000 \\
n = 9998 & \Rightarrow & 00039996 + 99960004 = 100000000 \\
n = 9999 & \Rightarrow & 00019999 + 99980001 = 100000000.
\end{array}
$$

The results are not written in this paper, but are similar to one seen in Section 5.

2.5   Fifth Line

Let's consider

$m = 100000, 1100000, 11100000, 111100000, 1111100000, 11111100000, 111111100000, 1111111100000, 11111111100000$

in (1.1), then for $n = 1$ and $n = 99999$, we have the first and the last *palindromic-type pandigital Pythagorean patterns* given below:

▶   **First Pattern**

$$
\begin{aligned}
09999999999^2 + 200000^2 &= \mathbf{1}\,0000000001^2 \\
\mathbf{12}\,09999999999^2 + 2200000^2 &= \mathbf{121}\,0000000001^2 \\
\mathbf{1232}\,09999999999^2 + 22200000^2 &= \mathbf{12321}\,0000000001^2 \\
\mathbf{123432}\,09999999999^2 + 222200000^2 &= \mathbf{1234321}\,0000000001^2 \\
\mathbf{12345432}\,09999999999^2 + 2222200000^2 &= \mathbf{123454321}\,0000000001^2 \\
\mathbf{1234565432}\,09999999999^2 + 22222200000^2 &= \mathbf{12345654321}\,0000000001^2 \\
\mathbf{123456765432}\,09999999999^2 + 222222200000^2 &= \mathbf{1234567654321}\,0000000001^2 \\
\mathbf{12345678765432}\,09999999999^2 + 2222222200000^2 &= \mathbf{123456787654321}\,0000000001^2 \\
\mathbf{1234567898765432}\,09999999999^2 + 22222222200000^2 &= \mathbf{12345678987654321}\,0000000001^2 \quad (2.11)
\end{aligned}
$$

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► **Last Pattern**

$$00000199999^2 + 19999800000^2 \qquad = \mathbf{1}\,9999800001^2$$
$$\mathbf{12}\,00000199999^2 + 219997800000^2 \qquad = \mathbf{121}\,9999800001^2$$
$$\mathbf{1232}\,00000199999^2 + 2219977800000^2 \qquad = \mathbf{12321}\,9999800001^2$$
$$\mathbf{123432}\,00000199999^2 + 22219777800000^2 \qquad = \mathbf{1234321}\,9999800001^2$$
$$\mathbf{12345432}\,00000199999^2 + 222217777800000^2 \qquad = \mathbf{123454321}\,9999800001^2$$
$$\mathbf{1234565432}\,00000199999^2 + 2222197777800000^2 \qquad = \mathbf{12345654321}\,9999800001^2$$
$$\mathbf{123456765432}\,00000199999^2 + 22221997777800000^2 \quad = \mathbf{1234567654321}\,9999800001^2$$
$$\mathbf{12345678765432}\,00000199999^2 + 222219997777800000^2 \ = \mathbf{123456787654321}\,9999800001^2$$
$$\mathbf{1234567898765432}\,00000199999^2 + 2222199997777800000^2 = \mathbf{12345678987654321}\,9999800001^2 \quad (2.12)$$

In this case, we observe that the second term in the first line doesn't give good pattern. It happens with many results. Below are some remarks based on above two patterns:

Remark 5.   *(i) The **first line** of first pattern (2.9) is the **fifth line** as given in pattern (2.1), i.e.,*

$$9999999999^2 + 200000^2 = 10000000001^2.$$

*(ii) The **last ten digits** follow the square of as of numbers, i.e.,*

$$0000000001 = 1^2, \ 0000000004 = 2^2, \ \dots \ ,9999800001 = 99999^2.$$

*(iii) The sum of the **last ten digits** of first and third members of each line is same, i.e.,*

$$
\begin{array}{llll}
n = 1 & \Rightarrow & 9999999999 + 0000000001 = 10000000000 \\
n = 2 & \Rightarrow & 9999999996 + 0000000004 = 10000000000 \\
n = 3 & \Rightarrow & 9999999991 + 0000000009 = 10000000000 \\
n = 4 & \Rightarrow & 9999999984 + 0000000016 = 10000000000 \\
\dots & & \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \\
\dots & & \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \\
n = 9997 & \Rightarrow & 0000599991 + 9999400009 = 10000000000 \\
n = 9998 & \Rightarrow & 0000399996 + 9999600004 = 10000000000 \\
n = 9999 & \Rightarrow & 0000199999 + 9999800001 = 10000000000.
\end{array}
$$

The results are not written in this paper, but are similar to one seen in Section 5.

According to above five lines of example (2.1), the same procedure continues for further lines. The results in this paper are divided in three groups based on first three lines. **First group** is with 9 results, the **second group** is with 99 results, and the **third group** is with 999 results. In second and third groups first 20 patterns are written complete, and the other patterns are written just with first four lines. The continuation is obvious following the similar way.

3 First Group

Below are 9 examples of **pattern in Pythagorean triples** with 9 digits from 1 to 9 written as **palindromic-type**, where the **first line** of first pattern is the same as **first line** of example (2.1). Moreover, this section is an extension of subsection 2.1.

3.1 For $n = 1, \ 2, \ 3, \ ..., 7, \ 8, \ 9:$

Let's consider

$$m = 10, \ 110, \ 1110, \ 11110, \ 111110, \ 1111110, \ 11111110, \ 111111110, \ 1111111110$$

in (1.1), then for each value of $n = 1, \ 2, \ 3, \ ..., 7, \ 8, \ 9$; there are 9 *palindromic-type pandigital Pythagorean patterns* given below:

$$
\begin{aligned}
099^2 + 20^2 &= 1\,01^2 \\
12\,099^2 + 220^2 &= 121\,01^2 \\
1232\,099^2 + 2220^2 &= 12321\,01^2 \\
123432\,099^2 + 22220^2 &= 1234321\,01^2 \\
12345432\,099^2 + 222220^2 &= 123454321\,01^2 \\
1234565432\,099^2 + 2222220^2 &= 12345654321\,01^2 \\
123456765432\,099^2 + 22222220^2 &= 1234567654321\,01^2 \\
12345678765432\,099^2 + 222222220^2 &= 123456787654321\,01^2 \\
1234567898765432\,099^2 + 2222222220^2 &= 12345678987654321\,01^2
\end{aligned}
\tag{3.1}
$$

$$
\begin{aligned}
096^2 + 40^2 &= 1\,04^2 \\
12\,096^2 + 440^2 &= 121\,04^2 \\
1232\,096^2 + 4440^2 &= 12321\,04^2 \\
123432\,096^2 + 44440^2 &= 1234321\,04^2 \\
12345432\,096^2 + 444440^2 &= 123454321\,04^2 \\
1234565432\,096^2 + 4444440^2 &= 12345654321\,04^2 \\
123456765432\,096^2 + 44444440^2 &= 1234567654321\,04^2 \\
12345678765432\,096^2 + 444444440^2 &= 123456787654321\,04^2 \\
1234567898765432\,096^2 + 4444444440^2 &= 12345678987654321\,04^2
\end{aligned}
\tag{3.2}
$$

$$091^2 + 60^2 = \mathbf{1}\,09^2$$

$$\mathbf{12}\,091^2 + 660^2 = \mathbf{121}\,09^2$$

$$\mathbf{1232}\,091^2 + 6660^2 = \mathbf{12321}\,09^2$$

$$\mathbf{123432}\,091^2 + 66660^2 = \mathbf{1234321}\,09^2$$

$$\mathbf{12345432}\,091^2 + 666660^2 = \mathbf{123454321}\,09^2$$

$$\mathbf{1234565432}\,091^2 + 6666660^2 = \mathbf{12345654321}\,09^2$$

$$\mathbf{123456765432}\,091^2 + 66666660^2 = \mathbf{1234567654321}\,09^2$$

$$\mathbf{12345678765432}\,091^2 + 666666660^2 = \mathbf{123456787654321}\,09^2$$

$$\mathbf{1234567898765432}\,091^2 + 6666666660^2 = \mathbf{12345678987654321}\,09^2 \tag{3.3}$$

$$084^2 + 80^2 = \mathbf{1}\,16^2$$

$$\mathbf{12}\,084^2 + 880^2 = \mathbf{121}\,16^2$$

$$\mathbf{1232}\,084^2 + 8880^2 = \mathbf{12321}\,16^2$$

$$\mathbf{123432}\,084^2 + 88880^2 = \mathbf{1234321}\,16^2$$

$$\mathbf{12345432}\,084^2 + 888880^2 = \mathbf{123454321}\,16^2$$

$$\mathbf{1234565432}\,084^2 + 8888880^2 = \mathbf{12345654321}\,16^2$$

$$\mathbf{123456765432}\,084^2 + 88888880^2 = \mathbf{1234567654321}\,16^2$$

$$\mathbf{12345678765432}\,084^2 + 888888880^2 = \mathbf{123456787654321}\,16^2$$

$$\mathbf{1234567898765432}\,084^2 + 8888888880^2 = \mathbf{12345678987654321}\,16^2 \tag{3.4}$$

$$075^2 + 100^2 = \mathbf{1}\,25^2$$

$$\mathbf{12}\,075^2 + 1100^2 = \mathbf{121}\,25^2$$

$$\mathbf{1232}\,075^2 + 11100^2 = \mathbf{12321}\,25^2$$

$$\mathbf{123432}\,075^2 + 111100^2 = \mathbf{1234321}\,25^2$$

$$\mathbf{12345432}\,075^2 + 1111100^2 = \mathbf{123454321}\,25^2$$

$$\mathbf{1234565432}\,075^2 + 11111100^2 = \mathbf{12345654321}\,25^2$$

$$\mathbf{123456765432}\,075^2 + 111111100^2 = \mathbf{1234567654321}\,25^2$$

$$\mathbf{12345678765432}\,075^2 + 1111111100^2 = \mathbf{123456787654321}\,25^2$$

$$\mathbf{1234567898765432}\,075^2 + 11111111100^2 = \mathbf{12345678987654321}\,25^2 \tag{3.5}$$

$$064^2 + 120^2 = \mathbf{1}\,36^2$$

$$\mathbf{12}\,064^2 + 1320^2 = \mathbf{121}\,36^2$$

$$\mathbf{1232}\,064^2 + 13320^2 = \mathbf{12321}\,36^2$$

$$\mathbf{123432}\,064^2 + 133320^2 = \mathbf{1234321}\,36^2$$

$$\mathbf{12345432}\,064^2 + 1333320^2 = \mathbf{123454321}\,36^2$$

$$\mathbf{1234565432}\,064^2 + 13333320^2 = \mathbf{12345654321}\,36^2$$

$$\mathbf{123456765432}\,064^2 + 133333320^2 = \mathbf{1234567654321}\,36^2$$

$$\mathbf{12345678765432}\,064^2 + 1333333320^2 = \mathbf{123456787654321}\,36^2$$

$$\mathbf{1234567898765432}\,064^2 + 13333333320^2 = \mathbf{12345678987654321}\,36^2 \tag{3.6}$$

$$051^2 + 140^2 \qquad = \mathbf{1}\,49^2$$
$$\mathbf{12}\,051^2 + 1540^2 \qquad = \mathbf{121}\,49^2$$
$$\mathbf{1232}\,051^2 + 15540^2 \qquad = \mathbf{12321}\,49^2$$
$$\mathbf{123432}\,051^2 + 155540^2 \qquad = \mathbf{1234321}\,49^2$$
$$\mathbf{12345432}\,051^2 + 1555540^2 \qquad = \mathbf{123454321}\,49^2$$
$$\mathbf{1234565432}\,051^2 + 15555540^2 \qquad = \mathbf{12345654321}\,49^2$$
$$\mathbf{123456765432}\,051^2 + 155555540^2 \qquad = \mathbf{1234567654321}\,49^2$$
$$\mathbf{12345678765432}\,051^2 + 1555555540^2 \quad = \mathbf{123456787654321}\,49^2$$
$$\mathbf{1234567898765432}\,051^2 + 15555555540^2 = \mathbf{12345678987654321}\,49^2 \qquad (3.7)$$

$$036^2 + 160^2 \qquad = \mathbf{1}\,64^2$$
$$\mathbf{12}\,036^2 + 1760^2 \qquad = \mathbf{121}\,64^2$$
$$\mathbf{1232}\,036^2 + 17760^2 \qquad = \mathbf{12321}\,64^2$$
$$\mathbf{123432}\,036^2 + 177760^2 \qquad = \mathbf{1234321}\,64^2$$
$$\mathbf{12345432}\,036^2 + 1777760^2 \qquad = \mathbf{123454321}\,64^2$$
$$\mathbf{1234565432}\,036^2 + 17777760^2 \qquad = \mathbf{12345654321}\,64^2$$
$$\mathbf{123456765432}\,036^2 + 177777760^2 \qquad = \mathbf{1234567654321}\,64^2$$
$$\mathbf{12345678765432}\,036^2 + 1777777760^2 \quad = \mathbf{123456787654321}\,64^2$$
$$\mathbf{1234567898765432}\,036^2 + 17777777760^2 = \mathbf{12345678987654321}\,64^2 \qquad (3.8)$$

$$019^2 + 180^2 \qquad = \mathbf{1}\,81^2$$
$$\mathbf{12}\,019^2 + 1980^2 \qquad = \mathbf{121}\,81^2$$
$$\mathbf{1232}\,019^2 + 19980^2 \qquad = \mathbf{12321}\,81^2$$
$$\mathbf{123432}\,019^2 + 199980^2 \qquad = \mathbf{1234321}\,81^2$$
$$\mathbf{12345432}\,019^2 + 1999980^2 \qquad = \mathbf{123454321}\,81^2$$
$$\mathbf{1234565432}\,019^2 + 19999980^2 \qquad = \mathbf{12345654321}\,81^2$$
$$\mathbf{123456765432}\,019^2 + 199999980^2 \qquad = \mathbf{1234567654321}\,81^2$$
$$\mathbf{12345678765432}\,019^2 + 1999999980^2 \quad = \mathbf{123456787654321}\,81^2$$
$$\mathbf{1234567898765432}\,019^2 + 19999999980^2 = \mathbf{12345678987654321}\,81^2 \qquad (3.9)$$

From the 9 patterns given above, we have following remark:

Remark 6. *It is interesting to observe the following symmetry in squared value in last two digits:*

$$Equation\ (2.1) \Rightarrow 01 = 1^2$$
$$Equation\ (2.2) \Rightarrow 04 = 2^2$$
$$Equation\ (2.3) \Rightarrow 09 = 3^2$$
$$\cdots \quad \cdots \qquad \cdots \quad \cdots$$
$$\cdots \quad \cdots \qquad \cdots \quad \cdots$$
$$Equation\ (2.7) \Rightarrow 49 = 7^2$$
$$Equation\ (2.8) \Rightarrow 64 = 8^2$$
$$Equation\ (2.9) \Rightarrow 81 = 9^2.$$

4 Second Group

Below are 99 examples of **pattern in Pythagorean triples** with 9 digits from 1 to 9 written as **palindromic-type**, where the **first line** of first pattern is the same as **second line** of example (2.1). Moreover, this section is an extension of subsection 2.2.

4.1 For $n = 1,\ 2,\ 3,\ ...,\ 97,\ 98,\ 99$:

This subsection is divided in two parts. The first part give first 19 results as complete patterns. The other 80 are written only with four lines. The other four lines follows on similar lines.

4.1.1 For $n = 1,\ 2,\ 3,\ ...,\ 17,\ 18,\ 19$:

Let's consider

$m = 100,\ 1100,\ 11100,\ 111100,\ 1111100,\ 11111100,\ 111111100,\ 1111111100,\ 11111111100$

in (1.1), then for each value of $n = 1,\ 2,\ 3,\ ...,\ 17,\ 18,\ 19$; there are 19 *palindromic-type pandigital Pythagorean patterns* given below:

$$09999^2 + 200^2 = \mathbf{1}\,0001^2$$
$$\mathbf{12}\,09999^2 + 2200^2 = \mathbf{121}\,0001^2$$
$$\mathbf{1232}\,09999^2 + 22200^2 = \mathbf{12321}\,0001^2$$
$$\mathbf{123432}\,09999^2 + 222200^2 = \mathbf{1234321}\,0001^2$$
$$\mathbf{12345432}\,09999^2 + 2222200^2 = \mathbf{123454321}\,0001^2$$
$$\mathbf{1234565432}\,09999^2 + 22222200^2 = \mathbf{12345654321}\,0001^2$$
$$\mathbf{123456765432}\,09999^2 + 222222200^2 = \mathbf{1234567654321}\,0001^2$$
$$\mathbf{12345678765432}\,09999^2 + 2222222200^2 = \mathbf{123456787654321}\,0001^2$$
$$\mathbf{1234567898765432}\,09999^2 + 22222222200^2 = \mathbf{12345678987654321}\,0001^2 \qquad (4.1)$$

$$09996^2 + 400^2 = \mathbf{1}\,0004^2$$
$$\mathbf{12}\,09996^2 + 4400^2 = \mathbf{121}\,0004^2$$
$$\mathbf{1232}\,09996^2 + 44400^2 = \mathbf{12321}\,0004^2$$
$$\mathbf{123432}\,09996^2 + 444400^2 = \mathbf{1234321}\,0004^2$$
$$\mathbf{12345432}\,09996^2 + 4444400^2 = \mathbf{123454321}\,0004^2$$
$$\mathbf{1234565432}\,09996^2 + 44444400^2 = \mathbf{12345654321}\,0004^2$$
$$\mathbf{123456765432}\,09996^2 + 444444400^2 = \mathbf{1234567654321}\,0004^2$$
$$\mathbf{12345678765432}\,09996^2 + 4444444400^2 = \mathbf{123456787654321}\,0004^2$$
$$\mathbf{1234567898765432}\,09996^2 + 44444444400^2 = \mathbf{12345678987654321}\,0004^2 \qquad (4.2)$$

$$09991^2 + 600^2 = \mathbf{1}\,0009^2$$
$$\mathbf{12}\,09991^2 + 6600^2 = \mathbf{121}\,0009^2$$
$$\mathbf{1232}\,09991^2 + 66600^2 = \mathbf{12321}\,0009^2$$
$$\mathbf{123432}\,09991^2 + 666600^2 = \mathbf{1234321}\,0009^2$$
$$\mathbf{12345432}\,09991^2 + 6666600^2 = \mathbf{123454321}\,0009^2$$
$$\mathbf{1234565432}\,09991^2 + 66666600^2 = \mathbf{12345654321}\,0009^2$$
$$\mathbf{123456765432}\,09991^2 + 666666600^2 = \mathbf{1234567654321}\,0009^2$$
$$\mathbf{12345678765432}\,09991^2 + 6666666600^2 = \mathbf{123456787654321}\,0009^2$$
$$\mathbf{1234567898765432}\,09991^2 + 66666666600^2 = \mathbf{12345678987654321}\,0009^2 \qquad (4.3)$$

$$09984^2 + 800^2 = \mathbf{1}\,0016^2$$
$$\mathbf{12}\,09984^2 + 8800^2 = \mathbf{121}\,0016^2$$
$$\mathbf{1232}\,09984^2 + 88800^2 = \mathbf{12321}\,0016^2$$
$$\mathbf{123432}\,09984^2 + 888800^2 = \mathbf{1234321}\,0016^2$$
$$\mathbf{12345432}\,09984^2 + 8888800^2 = \mathbf{123454321}\,0016^2$$
$$\mathbf{1234565432}\,09984^2 + 88888800^2 = \mathbf{12345654321}\,0016^2$$
$$\mathbf{123456765432}\,09984^2 + 888888800^2 = \mathbf{1234567654321}\,0016^2$$
$$\mathbf{12345678765432}\,09984^2 + 8888888800^2 = \mathbf{123456787654321}\,0016^2$$
$$\mathbf{1234567898765432}\,09984^2 + 88888888800^2 = \mathbf{12345678987654321}\,0016^2 \qquad (4.4)$$

$$09975^2 + 1000^2 = \mathbf{1}\,0025^2$$
$$\mathbf{12}\,09975^2 + 11000^2 = \mathbf{121}\,0025^2$$
$$\mathbf{1232}\,09975^2 + 111000^2 = \mathbf{12321}\,0025^2$$
$$\mathbf{123432}\,09975^2 + 1111000^2 = \mathbf{1234321}\,0025^2$$
$$\mathbf{12345432}\,09975^2 + 11111000^2 = \mathbf{123454321}\,0025^2$$
$$\mathbf{1234565432}\,09975^2 + 111111000^2 = \mathbf{12345654321}\,0025^2$$
$$\mathbf{123456765432}\,09975^2 + 1111111000^2 = \mathbf{1234567654321}\,0025^2$$
$$\mathbf{12345678765432}\,09975^2 + 11111111000^2 = \mathbf{123456787654321}\,0025^2$$
$$\mathbf{1234567898765432}\,09975^2 + 111111111000^2 = \mathbf{12345678987654321}\,0025^2 \qquad (4.5)$$

$$09964^2 + 1200^2 = \mathbf{1}\,0036^2$$
$$\mathbf{12}\,09964^2 + 13200^2 = \mathbf{121}\,0036^2$$
$$\mathbf{1232}\,09964^2 + 133200^2 = \mathbf{12321}\,0036^2$$
$$\mathbf{123432}\,09964^2 + 1333200^2 = \mathbf{1234321}\,0036^2$$
$$\mathbf{12345432}\,09964^2 + 13333200^2 = \mathbf{123454321}\,0036^2$$
$$\mathbf{1234565432}\,09964^2 + 133333200^2 = \mathbf{12345654321}\,0036^2$$
$$\mathbf{123456765432}\,09964^2 + 1333333200^2 = \mathbf{1234567654321}\,0036^2$$
$$\mathbf{12345678765432}\,09964^2 + 13333333200^2 = \mathbf{123456787654321}\,0036^2$$
$$\mathbf{1234567898765432}\,09964^2 + 133333333200^2 = \mathbf{12345678987654321}\,0036^2 \qquad (4.6)$$

$$09951^2 + 1400^2 = \mathbf{1}\,49^2$$
$$\mathbf{12}\,09951^2 + 15400^2 = \mathbf{121}\,0049^2$$
$$\mathbf{1232}\,09951^2 + 155400^2 = \mathbf{12321}\,0049^2$$
$$\mathbf{123432}\,09951^2 + 1555400^2 = \mathbf{1234321}\,0049^2$$
$$\mathbf{12345432}\,09951^2 + 15555400^2 = \mathbf{123454321}\,0049^2$$
$$\mathbf{1234565432}\,09951^2 + 155555400^2 = \mathbf{12345654321}\,0049^2$$
$$\mathbf{123456765432}\,09951^2 + 1555555400^2 = \mathbf{1234567654321}\,0049^2$$
$$\mathbf{12345678765432}\,09951^2 + 15555555400^2 = \mathbf{123456787654321}\,0049^2$$
$$\mathbf{1234567898765432}\,09951^2 + 155555555400^2 = \mathbf{12345678987654321}\,0049^2 \qquad (4.7)$$

$$09936^2 + 1600^2 = \mathbf{1}\,0064^2$$
$$\mathbf{12}\,09936^2 + 17600^2 = \mathbf{121}\,0064^2$$
$$\mathbf{1232}\,09936^2 + 177600^2 = \mathbf{12321}\,0064^2$$
$$\mathbf{123432}\,09936^2 + 1777600^2 = \mathbf{1234321}\,0064^2$$
$$\mathbf{12345432}\,09936^2 + 17777600^2 = \mathbf{123454321}\,0064^2$$
$$\mathbf{1234565432}\,09936^2 + 177777600^2 = \mathbf{12345654321}\,0064^2$$
$$\mathbf{123456765432}\,09936^2 + 1777777600^2 = \mathbf{1234567654321}\,0064^2$$
$$\mathbf{12345678765432}\,09936^2 + 17777777600^2 = \mathbf{123456787654321}\,0064^2$$
$$\mathbf{1234567898765432}\,09936^2 + 177777777600^2 = \mathbf{12345678987654321}\,0064^2 \qquad (4.8)$$

$$09919^2 + 1800^2 = \mathbf{1}\,81^2$$
$$\mathbf{12}\,09919^2 + 19800^2 = \mathbf{121}\,0081^2$$
$$\mathbf{1232}\,09919^2 + 199800^2 = \mathbf{12321}\,0081^2$$
$$\mathbf{123432}\,09919^2 + 1999800^2 = \mathbf{1234321}\,0081^2$$
$$\mathbf{12345432}\,09919^2 + 19999800^2 = \mathbf{123454321}\,0081^2$$
$$\mathbf{1234565432}\,09919^2 + 199999800^2 = \mathbf{12345654321}\,0081^2$$
$$\mathbf{123456765432}\,09919^2 + 1999999800^2 = \mathbf{1234567654321}\,0081^2$$
$$\mathbf{12345678765432}\,09919^2 + 19999999800^2 = \mathbf{123456787654321}\,0081^2$$
$$\mathbf{1234567898765432}\,09919^2 + 199999999800^2 = \mathbf{12345678987654321}\,0081^2 \qquad (4.9)$$

$$09900^2 + 2000^2 = \mathbf{1}\,0100^2$$
$$\mathbf{12}\,09900^2 + 22000^2 = \mathbf{121}\,0100^2$$
$$\mathbf{1232}\,09900^2 + 222000^2 = \mathbf{12321}\,0100^2$$
$$\mathbf{123432}\,09900^2 + 2222000^2 = \mathbf{1234321}\,0100^2$$
$$\mathbf{12345432}\,09900^2 + 22222000^2 = \mathbf{123454321}\,0100^2$$
$$\mathbf{1234565432}\,09900^2 + 222222000^2 = \mathbf{12345654321}\,0100^2$$
$$\mathbf{123456765432}\,09900^2 + 2222222000^2 = \mathbf{1234567654321}\,0100^2$$
$$\mathbf{12345678765432}\,09900^2 + 22222222000^2 = \mathbf{123456787654321}\,0100^2$$
$$\mathbf{1234567898765432}\,09900^2 + 222222222000^2 = \mathbf{12345678987654321}\,0100^2 \qquad (4.10)$$

$$09879^2 + 2200^2 = \mathbf{1}\,0121^2$$
$$\mathbf{12}\,09879^2 + 24200^2 = \mathbf{121}\,0121^2$$
$$\mathbf{1232}\,09879^2 + 244200^2 = \mathbf{12321}\,0121^2$$
$$\mathbf{123432}\,09879^2 + 2444200^2 = \mathbf{1234321}\,0121^2$$
$$\mathbf{12345432}\,09879^2 + 24444200^2 = \mathbf{123454321}\,0121^2$$
$$\mathbf{1234565432}\,09879^2 + 244444200^2 = \mathbf{12345654321}\,0121^2$$
$$\mathbf{123456765432}\,09879^2 + 2444444200^2 = \mathbf{1234567654321}\,0121^2$$
$$\mathbf{12345678765432}\,09879^2 + 24444444200^2 = \mathbf{123456787654321}\,0121^2$$
$$\mathbf{1234567898765432}\,09879^2 + 244444444200^2 = \mathbf{12345678987654321}\,0121^2 \qquad (4.11)$$

$$09856^2 + 2400^2 = \mathbf{1}\,0144^2$$
$$\mathbf{12}\,09856^2 + 26400^2 = \mathbf{121}\,0144^2$$
$$\mathbf{1232}\,09856^2 + 266400^2 = \mathbf{12321}\,0144^2$$
$$\mathbf{123432}\,09856^2 + 2666400^2 = \mathbf{1234321}\,0144^2$$
$$\mathbf{12345432}\,09856^2 + 26666400^2 = \mathbf{123454321}\,0144^2$$
$$\mathbf{1234565432}\,09856^2 + 266666400^2 = \mathbf{12345654321}\,0144^2$$
$$\mathbf{123456765432}\,09856^2 + 2666666400^2 = \mathbf{1234567654321}\,0144^2$$
$$\mathbf{12345678765432}\,09856^2 + 26666666400^2 = \mathbf{123456787654321}\,0144^2$$
$$\mathbf{1234567898765432}\,09856^2 + 266666666400^2 = \mathbf{12345678987654321}\,0144^2 \qquad (4.12)$$

$$09831^2 + 2600^2 = \mathbf{1}\,0169^2$$
$$\mathbf{12}\,09831^2 + 28600^2 = \mathbf{121}\,0169^2$$
$$\mathbf{1232}\,09831^2 + 288600^2 = \mathbf{12321}\,0169^2$$
$$\mathbf{123432}\,09831^2 + 2888600^2 = \mathbf{1234321}\,0169^2$$
$$\mathbf{12345432}\,09831^2 + 28888600^2 = \mathbf{123454321}\,0169^2$$
$$\mathbf{1234315432}\,09831^2 + 288888600^2 = \mathbf{12343154321}\,0169^2$$
$$\mathbf{123431765432}\,09831^2 + 2888888600^2 = \mathbf{1234317654321}\,0169^2$$
$$\mathbf{12343178765432}\,09831^2 + 28888888600^2 = \mathbf{123431787654321}\,0169^2$$
$$\mathbf{1234317898765432}\,09831^2 + 288888888600^2 = \mathbf{12343178987654321}\,0169^2 \qquad (4.13)$$

$$09804^2 + 2800^2 = \mathbf{1}\,0196^2$$
$$\mathbf{12}\,09804^2 + 30800^2 = \mathbf{121}\,0196^2$$
$$\mathbf{1232}\,09804^2 + 310800^2 = \mathbf{12321}\,0196^2$$
$$\mathbf{123432}\,09804^2 + 3110800^2 = \mathbf{1234321}\,0196^2$$
$$\mathbf{12345432}\,09804^2 + 31110800^2 = \mathbf{123454321}\,0196^2$$
$$\mathbf{1234565432}\,09804^2 + 311110800^2 = \mathbf{12340454321}\,0196^2$$
$$\mathbf{123456765432}\,09804^2 + 3111110800^2 = \mathbf{1234047654321}\,0196^2$$
$$\mathbf{12345678765432}\,09804^2 + 31111110800^2 = \mathbf{123404787654321}\,0196^2$$
$$\mathbf{1234567898765432}\,09804^2 + 311111110800^2 = \mathbf{12340478987654321}\,0196^2 \qquad (4.14)$$

$$09775^2 + 3300^2 = \mathbf{1}\,0225^2$$
$$\mathbf{12}\,09775^2 + 33000^2 = \mathbf{121}\,0225^2$$
$$\mathbf{1232}\,09775^2 + 333000^2 = \mathbf{12321}\,0225^2$$
$$\mathbf{123432}\,09775^2 + 3333000^2 = \mathbf{1234321}\,0225^2$$
$$\mathbf{12345432}\,09775^2 + 33333000^2 = \mathbf{123454321}\,0225^2$$
$$\mathbf{1234045432}\,09775^2 + 333333000^2 = \mathbf{12340454321}\,0225^2$$
$$\mathbf{123404765432}\,09775^2 + 3333333000^2 = \mathbf{1234047654321}\,0225^2$$
$$\mathbf{12340478765432}\,09775^2 + 33333333000^2 = \mathbf{123404787654321}\,0225^2$$
$$\mathbf{1234047898765432}\,09775^2 + 333333333000^2 = \mathbf{12340478987654321}\,0225^2 \qquad (4.15)$$

$$09744^2 + 3200^2 = \mathbf{1}\,0256^2$$
$$\mathbf{12}\,09744^2 + 35200^2 = \mathbf{121}\,0256^2$$
$$\mathbf{1232}\,09744^2 + 355200^2 = \mathbf{12321}\,0256^2$$
$$\mathbf{123432}\,09744^2 + 3555200^2 = \mathbf{1234321}\,0256^2$$
$$\mathbf{12345432}\,09744^2 + 35555200^2 = \mathbf{123454321}\,0256^2$$
$$\mathbf{1234045432}\,09744^2 + 355555200^2 = \mathbf{12340454321}\,0256^2$$
$$\mathbf{123404765432}\,09744^2 + 3555555200^2 = \mathbf{1234047654321}\,0256^2$$
$$\mathbf{12340478765432}\,09744^2 + 35555555200^2 = \mathbf{123404787654321}\,0256^2$$
$$\mathbf{1234047898765432}\,09744^2 + 355555555200^2 = \mathbf{12340478987654321}\,0256^2 \tag{4.16}$$

$$09711^2 + 3400^2 = \mathbf{1}\,0289^2$$
$$\mathbf{12}\,09711^2 + 37400^2 = \mathbf{121}\,0289^2$$
$$\mathbf{1232}\,09711^2 + 377400^2 = \mathbf{12321}\,0289^2$$
$$\mathbf{123432}\,09711^2 + 3777400^2 = \mathbf{1234321}\,0289^2$$
$$\mathbf{12345432}\,09711^2 + 37777400^2 = \mathbf{123454321}\,0289^2$$
$$\mathbf{1234045432}\,09711^2 + 377777400^2 = \mathbf{12340454321}\,0289^2$$
$$\mathbf{123404765432}\,09711^2 + 3777777400^2 = \mathbf{1234047654321}\,0289^2$$
$$\mathbf{12340478765432}\,09711^2 + 37777777400^2 = \mathbf{123404787654321}\,0289^2$$
$$\mathbf{1234047898765432}\,09711^2 + 377777777400^2 = \mathbf{12340478987654321}\,0289^2 \tag{4.17}$$

$$09676^2 + 3600^2 = \mathbf{1}\,0324^2$$
$$\mathbf{12}\,09676^2 + 39600^2 = \mathbf{121}\,0324^2$$
$$\mathbf{1232}\,09676^2 + 399600^2 = \mathbf{12321}\,0324^2$$
$$\mathbf{123432}\,09676^2 + 3999600^2 = \mathbf{1234321}\,0324^2$$
$$\mathbf{12345432}\,09676^2 + 39999600^2 = \mathbf{123454321}\,0324^2$$
$$\mathbf{1234565432}\,09676^2 + 399999600^2 = \mathbf{12340454321}\,0324^2$$
$$\mathbf{123456765432}\,09676^2 + 3999999600^2 = \mathbf{1234047654321}\,0324^2$$
$$\mathbf{12345678765432}\,09676^2 + 39999999600^2 = \mathbf{123404787654321}\,0324^2$$
$$\mathbf{1234567898765432}\,09676^2 + 399999999600^2 = \mathbf{12340478987654321}\,0324^2 \tag{4.18}$$

$$09639^2 + 3800^2 = \mathbf{1}\,0361^2$$
$$\mathbf{12}\,09639^2 + 41800^2 = \mathbf{121}\,0361^2$$
$$\mathbf{1232}\,09639^2 + 421800^2 = \mathbf{12321}\,0361^2$$
$$\mathbf{123432}\,09639^2 + 4221800^2 = \mathbf{1234321}\,0361^2$$
$$\mathbf{12345432}\,09639^2 + 42221800^2 = \mathbf{123454321}\,0361^2$$
$$\mathbf{12345645432}\,09639^2 + 422221800^2 = \mathbf{12340454321}\,0361^2$$
$$\mathbf{123456765432}\,09639^2 + 4222221800^2 = \mathbf{1234047654321}\,0361^2$$
$$\mathbf{12345678765432}\,09639^2 + 42222221800^2 = \mathbf{123404787654321}\,0361^2$$
$$\mathbf{1234567898765432}\,09639^2 + 422222221800^2 = \mathbf{12340478987654321}\,0361^2 \tag{4.19}$$

4.1.2   For $n = 20, \, 21, \, 23, \, ..., 97, \, 98, \, 99$:

Let's consider

$$m = 100, \, 1100, \, 11100, \, 111100, \, 1111100, \, 11111100, \, 111111100, \, 1111111100, \, 11111111100$$

in (1.1), then for each value of $n = 20, \, 21, \, 23, \, ..., 97, \, 98, \, 99$; there are 80 *palindromic-type pandigital Pythagorean patterns* given below. In each case, only first four values are written. The other 5 values can be written on similar lines as done in subsection 4.1.1.

$$09600^2 + 4000^2 = \mathbf{1}\,0400^2$$
$$\mathbf{12}\,09600^2 + 44000^2 = \mathbf{121}\,0400^2$$
$$\mathbf{1232}\,09600^2 + 444000^2 = \mathbf{12321}\,0400^2$$
$$\mathbf{123432}\,09600^2 + 4444000^2 = \mathbf{1234321}\,0400^2 \qquad (4.20)$$

$$09559^2 + 4200^2 = \mathbf{1}\,0441^2$$
$$\mathbf{12}\,09559^2 + 46200^2 = \mathbf{121}\,0441^2$$
$$\mathbf{1232}\,09559^2 + 466200^2 = \mathbf{12321}\,0441^2$$
$$\mathbf{123432}\,09559^2 + 4666200^2 = \mathbf{1234321}\,0441^2 \qquad (4.21)$$

$$09516^2 + 4400^2 = \mathbf{1}\,0484^2$$
$$\mathbf{12}\,09516^2 + 48400^2 = \mathbf{121}\,0484^2$$
$$\mathbf{1232}\,09516^2 + 488400^2 = \mathbf{12321}\,0484^2$$
$$\mathbf{123432}\,09516^2 + 4888400^2 = \mathbf{1234321}\,0484^2 \qquad (4.22)$$

$$09471^2 + 4600^2 = \mathbf{1}\,0529^2$$
$$\mathbf{12}\,09471^2 + 50600^2 = \mathbf{121}\,0529^2$$
$$\mathbf{1232}\,09471^2 + 510600^2 = \mathbf{12321}\,0529^2$$
$$\mathbf{123432}\,09471^2 + 5110600^2 = \mathbf{1234321}\,0529^2 \qquad (4.23)$$

$$09424^2 + 4800^2 = \mathbf{1}\,0576^2$$
$$\mathbf{12}\,09424^2 + 52800^2 = \mathbf{121}\,0576^2$$
$$\mathbf{1232}\,09424^2 + 532800^2 = \mathbf{12321}\,0576^2$$
$$\mathbf{123432}\,09424^2 + 5332800^2 = \mathbf{1234321}\,0576^2 \qquad (4.24)$$

$$09375^2 + 5000^2 = \mathbf{1}\,0625^2$$
$$\mathbf{12}\,09375^2 + 55000^2 = \mathbf{121}\,0625^2$$
$$\mathbf{1232}\,09375^2 + 555000^2 = \mathbf{12321}\,0625^2$$
$$\mathbf{123432}\,09375^2 + 5555000^2 = \mathbf{1234321}\,0625^2 \qquad (4.25)$$

$$09324^2 + 5200^2 = \mathbf{1}\,0676^2$$
$$\mathbf{12}\,09324^2 + 57200^2 = \mathbf{121}\,0676^2$$
$$\mathbf{1232}\,09324^2 + 577200^2 = \mathbf{12321}\,0676^2$$
$$\mathbf{123432}\,09324^2 + 5777200^2 = \mathbf{1234321}\,0676^2 \qquad (4.26)$$

$$09271^2 + 5400^2 = \mathbf{1}\,0729^2$$
$$\mathbf{12}\,09271^2 + 59400^2 = \mathbf{121}\,0729^2$$
$$\mathbf{1232}\,09271^2 + 599400^2 = \mathbf{12321}\,0729^2$$
$$\mathbf{123432}\,09271^2 + 5999400^2 = \mathbf{1234321}\,0729^2 \qquad (4.27)$$

$$09216^2 + 5600^2 = \mathbf{1}\,0784^2$$
$$\mathbf{12}\,09216^2 + 61600^2 = \mathbf{121}\,0784^2$$
$$\mathbf{1232}\,09216^2 + 621600^2 = \mathbf{12321}\,0784^2$$
$$\mathbf{123432}\,09216^2 + 6221600^2 = \mathbf{1234321}\,0784^2 \qquad (4.28)$$

$$09159^2 + 5800^2 = \mathbf{1}\,0841^2$$
$$\mathbf{12}\,09159^2 + 63800^2 = \mathbf{121}\,0841^2$$
$$\mathbf{1232}\,09159^2 + 643800^2 = \mathbf{12321}\,0841^2$$
$$\mathbf{123432}\,09159^2 + 6443800^2 = \mathbf{1234321}\,0841^2 \qquad (4.29)$$

$$09100^2 + 6000^2 = \mathbf{1}\,0900^2$$
$$\mathbf{12}\,09100^2 + 66000^2 = \mathbf{121}\,0900^2$$
$$\mathbf{1232}\,09100^2 + 666000^2 = \mathbf{12321}\,0900^2$$
$$\mathbf{123432}\,09100^2 + 6666000^2 = \mathbf{1234321}\,0900^2 \qquad (4.30)$$

$$09039^2 + 6200^2 = \mathbf{1}\,0961^2$$
$$\mathbf{12}\,09039^2 + 68200^2 = \mathbf{121}\,0961^2$$
$$\mathbf{1232}\,09039^2 + 688200^2 = \mathbf{12321}\,0961^2$$
$$\mathbf{123432}\,09039^2 + 6888200^2 = \mathbf{1234321}\,0961^2 \qquad (4.31)$$

$$08976^2 + 6400^2 = \mathbf{1}\,1024^2$$
$$\mathbf{12}\,08976^2 + 70400^2 = \mathbf{121}\,1024^2$$
$$\mathbf{1232}\,08976^2 + 710400^2 = \mathbf{12321}\,1024^2$$
$$\mathbf{123432}\,08976^2 + 7110400^2 = \mathbf{1234321}\,1024^2 \qquad (4.32)$$

$$08911^2 + 6600^2 = \mathbf{1}\,1089^2$$
$$\mathbf{12}\,08911^2 + 72600^2 = \mathbf{121}\,1089^2$$
$$\mathbf{1232}\,08911^2 + 732600^2 = \mathbf{12321}\,1089^2$$
$$\mathbf{123432}\,08911^2 + 7332600^2 = \mathbf{1234321}\,1089^2 \quad (4.33)$$

$$08844^2 + 6800^2 = \mathbf{1}\,1156^2$$
$$\mathbf{12}\,08844^2 + 74800^2 = \mathbf{121}\,1156^2$$
$$\mathbf{1232}\,08844^2 + 754800^2 = \mathbf{12321}\,1156^2$$
$$\mathbf{123432}\,08844^2 + 7554800^2 = \mathbf{1234321}\,1156^2 \quad (4.34)$$

$$08775^2 + 7000^2 = \mathbf{1}\,1225^2$$
$$\mathbf{12}\,08775^2 + 77000^2 = \mathbf{121}\,1225^2$$
$$\mathbf{1232}\,08775^2 + 777000^2 = \mathbf{12321}\,1225^2$$
$$\mathbf{123432}\,08775^2 + 7777000^2 = \mathbf{1234321}\,1225^2 \quad (4.35)$$

$$08704^2 + 7200^2 = \mathbf{1}\,1296^2$$
$$\mathbf{12}\,08704^2 + 79200^2 = \mathbf{121}\,1296^2$$
$$\mathbf{1232}\,08704^2 + 799200^2 = \mathbf{12321}\,1296^2$$
$$\mathbf{123432}\,08704^2 + 7999200^2 = \mathbf{1234321}\,1296^2 \quad (4.36)$$

$$08631^2 + 7400^2 = \mathbf{1}\,1369^2$$
$$\mathbf{12}\,08631^2 + 81400^2 = \mathbf{121}\,1369^2$$
$$\mathbf{1232}\,08631^2 + 821400^2 = \mathbf{12321}\,1369^2$$
$$\mathbf{123432}\,08631^2 + 8221400^2 = \mathbf{1234321}\,1369^2 \quad (4.37)$$

$$08556^2 + 7600^2 = \mathbf{1}\,1444^2$$
$$\mathbf{12}\,08556^2 + 83600^2 = \mathbf{121}\,1444^2$$
$$\mathbf{1232}\,08556^2 + 843600^2 = \mathbf{12321}\,1444^2$$
$$\mathbf{123432}\,08556^2 + 8443600^2 = \mathbf{1234321}\,1444^2 \quad (4.38)$$

$$08479^2 + 7800^2 = \mathbf{1}\,1521^2$$
$$\mathbf{12}\,08479^2 + 85800^2 = \mathbf{121}\,1521^2$$
$$\mathbf{1232}\,08479^2 + 865800^2 = \mathbf{12321}\,1521^2$$
$$\mathbf{123432}\,08479^2 + 8665800^2 = \mathbf{1234321}\,1521^2 \quad (4.39)$$

$$08400^2 + 8000^2 = \mathbf{1}\,1600^2$$
$$\mathbf{12}\,08400^2 + 88000^2 = \mathbf{121}\,1600^2$$
$$\mathbf{1232}\,08400^2 + 888000^2 = \mathbf{12321}\,1600^2$$
$$\mathbf{123432}\,08400^2 + 8888000^2 = \mathbf{1234321}\,1600^2 \quad (4.40)$$

$$08319^2 + 8200^2 = \mathbf{1}\,1681^2$$
$$\mathbf{12}\,08319^2 + 90200^2 = \mathbf{121}\,1681^2$$
$$\mathbf{1232}\,08319^2 + 910200^2 = \mathbf{12321}\,1681^2$$
$$\mathbf{123432}\,08319^2 + 9110200^2 = \mathbf{1234321}\,1681^2 \quad (4.41)$$

$$08236^2 + 8400^2 = \mathbf{1}\,1764^2$$
$$\mathbf{12}\,08236^2 + 92400^2 = \mathbf{121}\,1764^2$$
$$\mathbf{1232}\,08236^2 + 932400^2 = \mathbf{12321}\,1764^2$$
$$\mathbf{123432}\,08236^2 + 9332400^2 = \mathbf{1234321}\,1764^2 \quad (4.42)$$

$$08151^2 + 8600^2 = \mathbf{1}\,1849^2$$
$$\mathbf{12}\,08151^2 + 94600^2 = \mathbf{121}\,1849^2$$
$$\mathbf{1232}\,08151^2 + 954600^2 = \mathbf{12321}\,1849^2$$
$$\mathbf{123432}\,08151^2 + 9554600^2 = \mathbf{1234321}\,1849^2 \quad (4.43)$$

$$08064^2 + 8800^2 = \mathbf{1}\,1936^2$$
$$\mathbf{12}\,08064^2 + 96800^2 = \mathbf{121}\,1936^2$$
$$\mathbf{1232}\,08064^2 + 976800^2 = \mathbf{12321}\,1936^2$$
$$\mathbf{123432}\,08064^2 + 9776800^2 = \mathbf{1234321}\,1936^2 \quad (4.44)$$

$$07975^2 + 9000^2 = \mathbf{1}\,2025^2$$
$$\mathbf{12}\,07975^2 + 99000^2 = \mathbf{121}\,2025^2$$
$$\mathbf{1232}\,07975^2 + 999000^2 = \mathbf{12321}\,2025^2$$
$$\mathbf{123432}\,07975^2 + 9999000^2 = \mathbf{1234321}\,2025^2 \quad (4.45)$$

$$07884^2 + 9200^2 = \mathbf{1}\,2116^2$$
$$\mathbf{12}\,07884^2 + 101200^2 = \mathbf{121}\,2116^2$$
$$\mathbf{1232}\,07884^2 + 1021200^2 = \mathbf{12321}\,2116^2$$
$$\mathbf{123432}\,07884^2 + 10221200^2 = \mathbf{1234321}\,2116^2 \quad (4.46)$$

$$07791^2 + 9400^2 = \mathbf{1}\,2209^2$$
$$\mathbf{12}\,07791^2 + 103400^2 = \mathbf{121}\,2209^2$$
$$\mathbf{1232}\,07791^2 + 1043400^2 = \mathbf{12321}\,2209^2$$
$$\mathbf{123432}\,07791^2 + 10443400^2 = \mathbf{1234321}\,2209^2 \quad (4.47)$$

$$07696^2 + 9600^2 = \mathbf{1}\,2304^2$$
$$\mathbf{12}\,07696^2 + 105600^2 = \mathbf{121}\,2304^2$$
$$\mathbf{1232}\,07696^2 + 1065600^2 = \mathbf{12321}\,2304^2$$
$$\mathbf{123432}\,07696^2 + 10665600^2 = \mathbf{1234321}\,2304^2 \quad (4.48)$$

$$07599^2 + 9800^2 \quad = \mathbf{1}\,2401^2$$
$$\mathbf{12}\,07599^2 + 107800^2 \quad = \mathbf{121}\,2401^2$$
$$\mathbf{1232}\,07599^2 + 1087800^2 \quad = \mathbf{12321}\,2401^2$$
$$\mathbf{123432}\,07599^2 + 10887800^2 = \mathbf{1234321}\,2401^2 \qquad (4.49)$$

$$06751^2 + 11400^2 \quad = \mathbf{1}\,3249^2$$
$$\mathbf{12}\,06751^2 + 125400^2 \quad = \mathbf{121}\,3249^2$$
$$\mathbf{1232}\,06751^2 + 1265400^2 \quad = \mathbf{12321}\,3249^2$$
$$\mathbf{123432}\,06751^2 + 12665400^2 = \mathbf{1234321}\,3249^2 \qquad (4.57)$$

$$07500^2 + 10000^2 \quad = \mathbf{1}\,2500^2$$
$$\mathbf{12}\,07500^2 + 110000^2 \quad = \mathbf{121}\,2500^2$$
$$\mathbf{1232}\,07500^2 + 1110000^2 \quad = \mathbf{12321}\,2500^2$$
$$\mathbf{123432}\,07500^2 + 11110000^2 = \mathbf{1234321}\,2500^2 \qquad (4.50)$$

$$06636^2 + 11600^2 \quad = \mathbf{1}\,3364^2$$
$$\mathbf{12}\,06636^2 + 127600^2 \quad = \mathbf{121}\,3364^2$$
$$\mathbf{1232}\,06636^2 + 1287600^2 \quad = \mathbf{12321}\,3364^2$$
$$\mathbf{123432}\,06636^2 + 12887600^2 = \mathbf{1234321}\,3364^2 \qquad (4.58)$$

$$07399^2 + 10200^2 \quad = \mathbf{1}\,2601^2$$
$$\mathbf{12}\,07399^2 + 112200^2 \quad = \mathbf{121}\,2601^2$$
$$\mathbf{1232}\,07399^2 + 1132200^2 \quad = \mathbf{12321}\,2601^2$$
$$\mathbf{123432}\,07399^2 + 11332200^2 = \mathbf{1234321}\,2601^2 \qquad (4.51)$$

$$06519^2 + 11800^2 \quad = \mathbf{1}\,3481^2$$
$$\mathbf{12}\,06519^2 + 129800^2 \quad = \mathbf{121}\,3481^2$$
$$\mathbf{1232}\,06519^2 + 1309800^2 \quad = \mathbf{12321}\,3481^2$$
$$\mathbf{123432}\,06519^2 + 13109800^2 = \mathbf{1234321}\,3481^2 \qquad (4.59)$$

$$07296^2 + 10400^2 \quad = \mathbf{1}\,2704^2$$
$$\mathbf{12}\,07296^2 + 114400^2 \quad = \mathbf{121}\,2704^2$$
$$\mathbf{1232}\,07296^2 + 1154400^2 \quad = \mathbf{12321}\,2704^2$$
$$\mathbf{123432}\,07296^2 + 11554400^2 = \mathbf{1234321}\,2704^2 \qquad (4.52)$$

$$06400^2 + 12000^2 \quad = \mathbf{1}\,3600^2$$
$$\mathbf{12}\,06400^2 + 132000^2 \quad = \mathbf{121}\,3600^2$$
$$\mathbf{1232}\,06400^2 + 1332000^2 \quad = \mathbf{12321}\,3600^2$$
$$\mathbf{123432}\,06400^2 + 13332000^2 = \mathbf{1234321}\,3600^2 \qquad (4.60)$$

$$07191^2 + 10600^2 \quad = \mathbf{1}\,2809^2$$
$$\mathbf{12}\,07191^2 + 116600^2 \quad = \mathbf{121}\,2809^2$$
$$\mathbf{1232}\,07191^2 + 1176600^2 \quad = \mathbf{12321}\,2809^2$$
$$\mathbf{123432}\,07191^2 + 11776600^2 = \mathbf{1234321}\,2809^2 \qquad (4.53)$$

$$06279^2 + 12200^2 \quad = \mathbf{1}\,3721^2$$
$$\mathbf{12}\,06279^2 + 134200^2 \quad = \mathbf{121}\,3721^2$$
$$\mathbf{1232}\,06279^2 + 1354200^2 \quad = \mathbf{12321}\,3721^2$$
$$\mathbf{123432}\,06279^2 + 13554200^2 = \mathbf{1234321}\,3721^2 \qquad (4.61)$$

$$07084^2 + 10800^2 \quad = \mathbf{1}\,2916^2$$
$$\mathbf{12}\,07084^2 + 118800^2 \quad = \mathbf{121}\,2916^2$$
$$\mathbf{1232}\,07084^2 + 1198800^2 \quad = \mathbf{12321}\,2916^2$$
$$\mathbf{123432}\,07084^2 + 11998800^2 = \mathbf{1234321}\,2916^2 \qquad (4.54)$$

$$06156^2 + 12400^2 \quad = \mathbf{1}\,3844^2$$
$$\mathbf{12}\,06156^2 + 136400^2 \quad = \mathbf{121}\,3844^2$$
$$\mathbf{1232}\,06156^2 + 1376400^2 \quad = \mathbf{12321}\,3844^2$$
$$\mathbf{123432}\,06156^2 + 13776400^2 = \mathbf{1234321}\,3844^2 \qquad (4.62)$$

$$06975^2 + 11000^2 \quad = \mathbf{1}\,3025^2$$
$$\mathbf{12}\,06975^2 + 121000^2 \quad = \mathbf{121}\,3025^2$$
$$\mathbf{1232}\,06975^2 + 1221000^2 \quad = \mathbf{12321}\,3025^2$$
$$\mathbf{123432}\,06975^2 + 12221000^2 = \mathbf{1234321}\,3025^2 \qquad (4.55)$$

$$06031^2 + 12600^2 \quad = \mathbf{1}\,3969^2$$
$$\mathbf{12}\,06031^2 + 138600^2 \quad = \mathbf{121}\,3969^2$$
$$\mathbf{1232}\,06031^2 + 1398600^2 \quad = \mathbf{12321}\,3969^2$$
$$\mathbf{123432}\,06031^2 + 13998600^2 = \mathbf{1234321}\,3969^2 \qquad (4.63)$$

$$06864^2 + 11200^2 \quad = \mathbf{1}\,3136^2$$
$$\mathbf{12}\,06864^2 + 123200^2 \quad = \mathbf{121}\,3136^2$$
$$\mathbf{1232}\,06864^2 + 1243200^2 \quad = \mathbf{12321}\,3136^2$$
$$\mathbf{123432}\,06864^2 + 12443200^2 = \mathbf{1234321}\,3136^2 \qquad (4.56)$$

$$05904^2 + 12800^2 \quad = \mathbf{1}\,4096^2$$
$$\mathbf{12}\,05904^2 + 140800^2 \quad = \mathbf{121}\,4096^2$$
$$\mathbf{1232}\,05904^2 + 1420800^2 \quad = \mathbf{12321}\,4096^2$$
$$\mathbf{123432}\,05904^2 + 14220800^2 = \mathbf{1234321}\,4096^2 \qquad (4.64)$$

$$05775^2 + 13000^2 \quad = \mathbf{1}\,4225^2$$
$$\mathbf{12}\,05775^2 + 143000^2 \quad = \mathbf{121}\,4225^2$$
$$\mathbf{1232}\,05775^2 + 1443000^2 \quad = \mathbf{12321}\,4225^2$$
$$\mathbf{123432}\,05775^2 + 14443000^2 = \mathbf{1234321}\,4225^2 \quad (4.65)$$

$$04671^2 + 14600^2 \quad = \mathbf{1}\,5329^2$$
$$\mathbf{12}\,04671^2 + 160600^2 \quad = \mathbf{121}\,5329^2$$
$$\mathbf{1232}\,04671^2 + 1620600^2 \quad = \mathbf{12321}\,5329^2$$
$$\mathbf{123432}\,04671^2 + 16220600^2 = \mathbf{1234321}\,5329^2 \quad (4.73)$$

$$05644^2 + 13200^2 \quad = \mathbf{1}\,4356^2$$
$$\mathbf{12}\,05644^2 + 145200^2 \quad = \mathbf{121}\,4356^2$$
$$\mathbf{1232}\,05644^2 + 1465200^2 \quad = \mathbf{12321}\,4356^2$$
$$\mathbf{123432}\,05644^2 + 14665200^2 = \mathbf{1234321}\,4356^2 \quad (4.66)$$

$$04524^2 + 14800^2 \quad = \mathbf{1}\,5476^2$$
$$\mathbf{12}\,04524^2 + 162800^2 \quad = \mathbf{121}\,5476^2$$
$$\mathbf{1232}\,04524^2 + 1642800^2 \quad = \mathbf{12321}\,5476^2$$
$$\mathbf{123432}\,04524^2 + 16442800^2 = \mathbf{1234321}\,5476^2 \quad (4.74)$$

$$05511^2 + 13400^2 \quad = \mathbf{1}\,4489^2$$
$$\mathbf{12}\,05511^2 + 147400^2 \quad = \mathbf{121}\,4489^2$$
$$\mathbf{1232}\,05511^2 + 1487400^2 \quad = \mathbf{12321}\,4489^2$$
$$\mathbf{123432}\,05511^2 + 14887400^2 = \mathbf{1234321}\,4489^2 \quad (4.67)$$

$$04375^2 + 15000^2 \quad = \mathbf{1}\,5625^2$$
$$\mathbf{12}\,04375^2 + 165000^2 \quad = \mathbf{121}\,5625^2$$
$$\mathbf{1232}\,04375^2 + 1665000^2 \quad = \mathbf{12321}\,5625^2$$
$$\mathbf{123432}\,04375^2 + 16665000^2 = \mathbf{1234321}\,5625^2 \quad (4.75)$$

$$05376^2 + 13600^2 \quad = \mathbf{1}\,4624^2$$
$$\mathbf{12}\,05376^2 + 149600^2 \quad = \mathbf{121}\,4624^2$$
$$\mathbf{1232}\,05376^2 + 1509600^2 \quad = \mathbf{12321}\,4624^2$$
$$\mathbf{123432}\,05376^2 + 15109600^2 = \mathbf{1234321}\,4624^2 \quad (4.68)$$

$$04224^2 + 15200^2 \quad = \mathbf{1}\,5776^2$$
$$\mathbf{12}\,04224^2 + 167200^2 \quad = \mathbf{121}\,5776^2$$
$$\mathbf{1232}\,04224^2 + 1687200^2 \quad = \mathbf{12321}\,5776^2$$
$$\mathbf{123432}\,04224^2 + 16887200^2 = \mathbf{1234321}\,5776^2 \quad (4.76)$$

$$05239^2 + 13800^2 \quad = \mathbf{1}\,4761^2$$
$$\mathbf{12}\,05239^2 + 151800^2 \quad = \mathbf{121}\,4761^2$$
$$\mathbf{1232}\,05239^2 + 1531800^2 \quad = \mathbf{12321}\,4761^2$$
$$\mathbf{123432}\,05239^2 + 15331800^2 = \mathbf{1234321}\,4761^2 \quad (4.69)$$

$$04071^2 + 15400^2 \quad = \mathbf{1}\,5929^2$$
$$\mathbf{12}\,04071^2 + 169400^2 \quad = \mathbf{121}\,5929^2$$
$$\mathbf{1232}\,04071^2 + 1709400^2 \quad = \mathbf{12321}\,5929^2$$
$$\mathbf{123432}\,04071^2 + 17109400^2 = \mathbf{1234321}\,5929^2 \quad (4.77)$$

$$05100^2 + 14000^2 \quad = \mathbf{1}\,4900^2$$
$$\mathbf{12}\,05100^2 + 154000^2 \quad = \mathbf{121}\,4900^2$$
$$\mathbf{1232}\,05100^2 + 1554000^2 \quad = \mathbf{12321}\,4900^2$$
$$\mathbf{123432}\,05100^2 + 15554000^2 = \mathbf{1234321}\,4900^2 \quad (4.70)$$

$$03916^2 + 15600^2 \quad = \mathbf{1}\,6084^2$$
$$\mathbf{12}\,03916^2 + 171600^2 \quad = \mathbf{121}\,6084^2$$
$$\mathbf{1232}\,03916^2 + 1731600^2 \quad = \mathbf{12321}\,6084^2$$
$$\mathbf{123432}\,03916^2 + 17331600^2 = \mathbf{1234321}\,6084^2 \quad (4.78)$$

$$04959^2 + 14200^2 \quad = \mathbf{1}\,5041^2$$
$$\mathbf{12}\,04959^2 + 156200^2 \quad = \mathbf{121}\,5041^2$$
$$\mathbf{1232}\,04959^2 + 1576200^2 \quad = \mathbf{12321}\,5041^2$$
$$\mathbf{123432}\,04959^2 + 15776200^2 = \mathbf{1234321}\,5041^2 \quad (4.71)$$

$$03759^2 + 15800^2 \quad = \mathbf{1}\,6241^2$$
$$\mathbf{12}\,03759^2 + 173800^2 \quad = \mathbf{121}\,6241^2$$
$$\mathbf{1232}\,03759^2 + 1753800^2 \quad = \mathbf{12321}\,6241^2$$
$$\mathbf{123432}\,03759^2 + 17553800^2 = \mathbf{1234321}\,6241^2 \quad (4.79)$$

$$04816^2 + 14400^2 \quad = \mathbf{1}\,5184^2$$
$$\mathbf{12}\,04816^2 + 158400^2 \quad = \mathbf{121}\,5184^2$$
$$\mathbf{1232}\,04816^2 + 1598400^2 \quad = \mathbf{12321}\,5184^2$$
$$\mathbf{123432}\,04816^2 + 15998400^2 = \mathbf{1234321}\,5184^2 \quad (4.72)$$

$$03600^2 + 16000^2 \quad = \mathbf{1}\,6400^2$$
$$\mathbf{12}\,03600^2 + 176000^2 \quad = \mathbf{121}\,6400^2$$
$$\mathbf{1232}\,03600^2 + 1776000^2 \quad = \mathbf{12321}\,6400^2$$
$$\mathbf{123432}\,03600^2 + 17776000^2 = \mathbf{1234321}\,6400^2 \quad (4.80)$$

$$03439^2 + 16200^2 \quad = \mathbf{1}\,6561^2$$
$$\mathbf{12}\,03439^2 + 178200^2 \quad = \mathbf{121}\,6561^2$$
$$\mathbf{1232}\,03439^2 + 1798200^2 \quad = \mathbf{12321}\,6561^2$$
$$\mathbf{123432}\,03439^2 + 17998200^2 = \mathbf{1234321}\,6561^2 \quad (4.81)$$

$$02079^2 + 17800^2 \quad = \mathbf{1}\,7921^2$$
$$\mathbf{12}\,02079^2 + 195800^2 \quad = \mathbf{121}\,7921^2$$
$$\mathbf{1232}\,02079^2 + 1975800^2 \quad = \mathbf{12321}\,7921^2$$
$$\mathbf{123432}\,02079^2 + 19775800^2 = \mathbf{1234321}\,7921^2 \quad (4.89)$$

$$03276^2 + 16400^2 \quad = \mathbf{1}\,6724^2$$
$$\mathbf{12}\,03276^2 + 180400^2 \quad = \mathbf{121}\,6724^2$$
$$\mathbf{1232}\,03276^2 + 1820400^2 \quad = \mathbf{12321}\,6724^2$$
$$\mathbf{123432}\,03276^2 + 18220400^2 = \mathbf{1234321}\,6724^2 \quad (4.82)$$

$$01900^2 + 18000^2 \quad = \mathbf{1}\,8100^2$$
$$\mathbf{12}\,01900^2 + 198000^2 \quad = \mathbf{121}\,8100^2$$
$$\mathbf{1232}\,01900^2 + 1998000^2 \quad = \mathbf{12321}\,8100^2$$
$$\mathbf{123432}\,01900^2 + 19998000^2 = \mathbf{1234321}\,8100^2 \quad (4.90)$$

$$03111^2 + 16600^2 \quad = \mathbf{1}\,6889^2$$
$$\mathbf{12}\,03111^2 + 182600^2 \quad = \mathbf{121}\,6889^2$$
$$\mathbf{1232}\,03111^2 + 1842600^2 \quad = \mathbf{12321}\,6889^2$$
$$\mathbf{123432}\,03111^2 + 18442600^2 = \mathbf{1234321}\,6889^2 \quad (4.83)$$

$$01719^2 + 18200^2 \quad = \mathbf{1}\,8281^2$$
$$\mathbf{12}\,01719^2 + 200200^2 \quad = \mathbf{121}\,8281^2$$
$$\mathbf{1232}\,01719^2 + 2020200^2 \quad = \mathbf{12321}\,8281^2$$
$$\mathbf{123432}\,01719^2 + 20220200^2 = \mathbf{1234321}\,8281^2 \quad (4.91)$$

$$02944^2 + 16800^2 \quad = \mathbf{1}\,7056^2$$
$$\mathbf{12}\,02944^2 + 184800^2 \quad = \mathbf{121}\,7056^2$$
$$\mathbf{1232}\,02944^2 + 1864800^2 \quad = \mathbf{12321}\,7056^2$$
$$\mathbf{123432}\,02944^2 + 18664800^2 = \mathbf{1234321}\,7056^2 \quad (4.84)$$

$$01536^2 + 18400^2 \quad = \mathbf{1}\,8464^2$$
$$\mathbf{12}\,01536^2 + 202400^2 \quad = \mathbf{121}\,8464^2$$
$$\mathbf{1232}\,01536^2 + 2042400^2 \quad = \mathbf{12321}\,8464^2$$
$$\mathbf{123432}\,01536^2 + 20442400^2 = \mathbf{1234321}\,8464^2 \quad (4.92)$$

$$02775^2 + 17000^2 \quad = \mathbf{1}\,7225^2$$
$$\mathbf{12}\,02775^2 + 187000^2 \quad = \mathbf{121}\,7225^2$$
$$\mathbf{1232}\,02775^2 + 1887000^2 \quad = \mathbf{12321}\,7225^2$$
$$\mathbf{123432}\,02775^2 + 18887000^2 = \mathbf{1234321}\,7225^2 \quad (4.85)$$

$$01351^2 + 18600^2 \quad = \mathbf{1}\,8649^2$$
$$\mathbf{12}\,01351^2 + 204600^2 \quad = \mathbf{121}\,8649^2$$
$$\mathbf{1232}\,01351^2 + 2064600^2 \quad = \mathbf{12321}\,8649^2$$
$$\mathbf{123432}\,01351^2 + 20664600^2 = \mathbf{1234321}\,8649^2 \quad (4.93)$$

$$02604^2 + 17200^2 \quad = \mathbf{1}\,7396^2$$
$$\mathbf{12}\,02604^2 + 189200^2 \quad = \mathbf{121}\,7396^2$$
$$\mathbf{1232}\,02604^2 + 1909200^2 \quad = \mathbf{12321}\,7396^2$$
$$\mathbf{123432}\,02604^2 + 19109200^2 = \mathbf{1234321}\,7396^2 \quad (4.86)$$

$$01164^2 + 18800^2 \quad = \mathbf{1}\,8836^2$$
$$\mathbf{12}\,01164^2 + 206800^2 \quad = \mathbf{121}\,8836^2$$
$$\mathbf{1232}\,01164^2 + 2086800^2 \quad = \mathbf{12321}\,8836^2$$
$$\mathbf{123432}\,01164^2 + 20886800^2 = \mathbf{1234321}\,8836^2 \quad (4.94)$$

$$02431^2 + 17400^2 \quad = \mathbf{1}\,7569^2$$
$$\mathbf{12}\,02431^2 + 191400^2 \quad = \mathbf{121}\,7569^2$$
$$\mathbf{1232}\,02431^2 + 1931400^2 \quad = \mathbf{12321}\,7569^2$$
$$\mathbf{123432}\,02431^2 + 19331400^2 = \mathbf{1234321}\,7569^2 \quad (4.87)$$

$$00975^2 + 19000^2 \quad = \mathbf{1}\,9025^2$$
$$\mathbf{12}\,00975^2 + 209000^2 \quad = \mathbf{121}\,9025^2$$
$$\mathbf{1232}\,00975^2 + 2109000^2 \quad = \mathbf{12321}\,9025^2$$
$$\mathbf{123432}\,00975^2 + 21109000^2 = \mathbf{1234321}\,9025^2 \quad (4.95)$$

$$02256^2 + 17600^2 \quad = \mathbf{1}\,7744^2$$
$$\mathbf{12}\,02256^2 + 193600^2 \quad = \mathbf{121}\,7744^2$$
$$\mathbf{1232}\,02256^2 + 1953600^2 \quad = \mathbf{12321}\,7744^2$$
$$\mathbf{123432}\,02256^2 + 19553600^2 = \mathbf{1234321}\,7744^2 \quad (4.88)$$

$$00784^2 + 19200^2 \quad = \mathbf{1}\,9216^2$$
$$\mathbf{12}\,00784^2 + 211200^2 \quad = \mathbf{121}\,9216^2$$
$$\mathbf{1232}\,00784^2 + 2131200^2 \quad = \mathbf{12321}\,9216^2$$
$$\mathbf{123432}\,00784^2 + 21331200^2 = \mathbf{1234321}\,9216^2 \quad (4.96)$$

$$00591^2 + 19400^2 \quad = \mathbf{1}\,9409^2$$
$$\mathbf{12}\,00591^2 + 213400^2 \quad = \mathbf{121}\,9409^2$$
$$\mathbf{1232}\,00591^2 + 2153400^2 = \mathbf{12321}\,9409^2$$
$$\mathbf{123432}\,00591^2 + 21553400^2 = \mathbf{1234321}\,9409^2 \quad (4.97)$$

$$00199^2 + 19800^2 \quad = \mathbf{1}\,9801^2$$
$$\mathbf{12}\,00199^2 + 217800^2 \quad = \mathbf{121}\,9801^2$$
$$\mathbf{1232}\,00199^2 + 2197800^2 = \mathbf{12321}\,9801^2$$
$$\mathbf{123432}\,00199^2 + 21997800^2 = \mathbf{1234321}\,9801^2 \quad (4.99)$$

$$00396^2 + 19600^2 \quad = \mathbf{1}\,9604^2$$
$$\mathbf{12}\,00396^2 + 215600^2 \quad = \mathbf{121}\,9604^2$$
$$\mathbf{1232}\,00396^2 + 2175600^2 = \mathbf{12321}\,9604^2$$
$$\mathbf{123432}\,00396^2 + 21775600^2 = \mathbf{1234321}\,9604^2 \quad (4.98)$$

Based on above 99 results given in subsections 4.1.1 and 4.1.2, below are some remarks:

Remark 7. *In many cases, the second term in first line is out of pattern, but the continuations is well patterned. From n=20 to 99, we have written only first four lines. The rest 5 lines follows on similar way as of n=1 to 19 given in subsection 4.1. Also the last four digits in each case forms a perfect square. See below:*

$$
\begin{aligned}
Equation\ (3.1) &\Rightarrow 0001 = 1^2 \\
Equation\ (3.2) &\Rightarrow 0004 = 2^2 \\
Equation\ (3.3) &\Rightarrow 0009 = 3^2 \\
\cdots \quad \cdots & \qquad \cdots \quad \cdots \\
\cdots \quad \cdots & \qquad \cdots \quad \cdots \\
Equation\ (3.97) &\Rightarrow 9409 = 97^2 \\
Equation\ (3.98) &\Rightarrow 9604 = 98^2 \\
Equation\ (3.99) &\Rightarrow 9801 = 99^2.
\end{aligned}
$$

5   Third Group

Below are 999 examples of **pattern in Pythagorean triples** with 9 digits from 1 to 9 written as **palindromic-type**, where the **first line** of first pattern is the same as **third line** of example (2.1). Moreover, this section is an extension of subsection 2.3. First 19 examples are complete. Then from 20 to 999, the results are written in reduced form. These can be completed on similar lines.

5.1   For $n = 1,\ 2,\ 3,\ ...,97,\ 98,\ 99$:

This subsection is divided in two parts. The first part give first 19 results give complete patterns. The other 80 are with first four lines.

5.1.1   For $n = 1,\ 2,\ 3,\ ...\ ,17,\ 18,\ 19$:

Let's consider

$m = 1000,\ 11000,\ 111000,\ 1111000,\ 11111000,\ 111111000,\ 1111111000,\ 11111111000,\ 111111111000$

in (1.1), then for each value of $n = 1,\ 2,\ 3,\ ...\ ,17,\ 18,\ 19$; there are 19 *palindromic-type pandigital Pythagorean patterns* given below:

$$0999999^2 + 2000^2 = 1\,000001^2$$
$$120999999^2 + 22000^2 = 121\,000001^2$$
$$1232099999^2 + 222000^2 = 12321\,000001^2$$
$$1234320999999^2 + 2222000^2 = 1234321\,000001^2$$
$$123454320999999^2 + 22222000^2 = 123454321\,000001^2$$
$$12345654320999999^2 + 222222000^2 = 12345654321\,000001^2$$
$$1234567654320999999^2 + 2222222000^2 = 1234567654321\,000001^2$$
$$123456787654320999999^2 + 22222222000^2 = 123456787654321\,000001^2$$
$$12345678987654320999999^2 + 222222222000^2 = 12345678987654321\,000001^2 \qquad (5.1)$$

$$0999996^2 + 4000^2 = 1\,000004^2$$
$$120999996^2 + 44000^2 = 121\,000004^2$$
$$1232099996^2 + 444000^2 = 12321\,000004^2$$
$$1234320999996^2 + 4444000^2 = 1234321\,000004^2$$
$$123454320999996^2 + 44444000^2 = 123454321\,000004^2$$
$$12345654320999996^2 + 444444000^2 = 12345654321\,000004^2$$
$$1234567654320999996^2 + 4444444000^2 = 1234567654321\,000004^2$$
$$123456787654320999996^2 + 44444444000^2 = 123456787654321\,000004^2$$
$$12345678987654320999996^2 + 444444444000^2 = 12345678987654321\,000004^2 \qquad (5.2)$$

$$0999991^2 + 6000^2 = 1\,000009^2$$
$$120999991^2 + 66000^2 = 121\,000009^2$$
$$1232099991^2 + 666000^2 = 12321\,000009^2$$
$$1234320999991^2 + 6666000^2 = 1234321\,000009^2$$
$$123454320999991^2 + 66666000^2 = 123454321\,000009^2$$
$$12345654320999991^2 + 666666000^2 = 12345654321\,000009^2$$
$$1234567654320999991^2 + 6666666000^2 = 1234567654321\,000009^2$$
$$123456787654320999991^2 + 66666666000^2 = 123456787654321\,000009^2$$
$$12345678987654320999991^2 + 666666666000^2 = 12345678987654321\,000009^2 \qquad (5.3)$$

$$0999984^2 + 8000^2 \qquad = \mathbf{1}\,000016^2$$
$$\mathbf{12}\,0999984^2 + 88000^2 \qquad = \mathbf{121}\,000016^2$$
$$\mathbf{1232}\,0999984^2 + 888000^2 \qquad = \mathbf{12321}\,000016^2$$
$$\mathbf{123432}\,0999984^2 + 8888000^2 \qquad = \mathbf{1234321}\,000016^2$$
$$\mathbf{12345432}\,0999984^2 + 88888000^2 \qquad = \mathbf{123454321}\,000016^2$$
$$\mathbf{1234565432}\,0999984^2 + 888888000^2 \qquad = \mathbf{12345654321}\,000016^2$$
$$\mathbf{123456765432}\,0999984^2 + 8888888000^2 \qquad = \mathbf{1234567654321}\,000016^2$$
$$\mathbf{12345678765432}\,0999984^2 + 88888888000^2 \qquad = \mathbf{123456787654321}\,000016^2$$
$$\mathbf{1234567898765432}\,0999984^2 + 888888888000^2 = \mathbf{12345678987654321}\,000016^2 \qquad (5.4)$$

$$0999975^2 + 10000^2 \qquad = \mathbf{1}\,000025^2$$
$$\mathbf{12}\,0999975^2 + 110000^2 \qquad = \mathbf{121}\,000025^2$$
$$\mathbf{1232}\,0999975^2 + 1110000^2 \qquad = \mathbf{12321}\,000025^2$$
$$\mathbf{123432}\,0999975^2 + 11110000^2 \qquad = \mathbf{1234321}\,000025^2$$
$$\mathbf{12345432}\,0999975^2 + 111110000^2 \qquad = \mathbf{123454321}\,000025^2$$
$$\mathbf{1234565432}\,0999975^2 + 1111110000^2 \qquad = \mathbf{12345654321}\,000025^2$$
$$\mathbf{123456765432}\,0999975^2 + 11111110000^2 \qquad = \mathbf{1234567654321}\,000025^2$$
$$\mathbf{12345678765432}\,0999975^2 + 111111110000^2 \qquad = \mathbf{123456787654321}\,000025^2$$
$$\mathbf{1234567898765432}\,0999975^2 + 1111111110000^2 = \mathbf{12345678987654321}\,000025^2 \qquad (5.5)$$

$$0999964^2 + 12000^2 \qquad = \mathbf{1}\,000036^2$$
$$\mathbf{12}\,0999964^2 + 132000^2 \qquad = \mathbf{121}\,000036^2$$
$$\mathbf{1232}\,0999964^2 + 1332000^2 \qquad = \mathbf{12321}\,000036^2$$
$$\mathbf{123432}\,0999964^2 + 13332000^2 \qquad = \mathbf{1234321}\,000036^2$$
$$\mathbf{12345432}\,0999964^2 + 133332000^2 \qquad = \mathbf{123454321}\,000036^2$$
$$\mathbf{1234565432}\,0999964^2 + 1333332000^2 \qquad = \mathbf{12345654321}\,000036^2$$
$$\mathbf{123456765432}\,0999964^2 + 13333332000^2 \qquad = \mathbf{1234567654321}\,000036^2$$
$$\mathbf{12345678765432}\,0999964^2 + 133333332000^2 \qquad = \mathbf{123456787654321}\,000036^2$$
$$\mathbf{1234567898765432}\,0999964^2 + 1333333332000^2 = \mathbf{12345678987654321}\,000036^2 \qquad (5.6)$$

$$0999951^2 + 14000^2 \qquad = \mathbf{1}\,000049^2$$
$$\mathbf{12}\,0999951^2 + 154000^2 \qquad = \mathbf{121}\,000049^2$$
$$\mathbf{1232}\,0999951^2 + 1554000^2 \qquad = \mathbf{12321}\,000049^2$$
$$\mathbf{123432}\,0999951^2 + 15554000^2 \qquad = \mathbf{1234321}\,000049^2$$
$$\mathbf{12345432}\,0999951^2 + 155554000^2 \qquad = \mathbf{123454321}\,000049^2$$
$$\mathbf{1234565432}\,0999951^2 + 1555554000^2 \qquad = \mathbf{12345654321}\,000049^2$$
$$\mathbf{123456765432}\,0999951^2 + 15555554000^2 \qquad = \mathbf{1234567654321}\,000049^2$$
$$\mathbf{12345678765432}\,0999951^2 + 155555554000^2 \qquad = \mathbf{123456787654321}\,000049^2$$
$$\mathbf{1234567898765432}\,0999951^2 + 1555555554000^2 = \mathbf{12345678987654321}\,000049^2 \qquad (5.7)$$

$$0999936^2 + 16000^2 \qquad = \mathbf{1}\,000064^2$$
$$\mathbf{12}\,0999936^2 + 176000^2 \qquad = \mathbf{121}\,000064^2$$
$$\mathbf{1232}\,0999936^2 + 1776000^2 \qquad = \mathbf{12321}\,000064^2$$
$$\mathbf{123432}\,0999936^2 + 17776000^2 \qquad = \mathbf{1234321}\,000064^2$$
$$\mathbf{12345432}\,0999936^2 + 177776000^2 \qquad = \mathbf{123454321}\,000064^2$$
$$\mathbf{1234565432}\,0999936^2 + 1777776000^2 \qquad = \mathbf{12345654321}\,000064^2$$
$$\mathbf{123456765432}\,0999936^2 + 17777776000^2 \qquad = \mathbf{1234567654321}\,000064^2$$
$$\mathbf{12345678765432}\,0999936^2 + 177777776000^2 \qquad = \mathbf{123456787654321}\,000064^2$$
$$\mathbf{1234567898765432}\,0999936^2 + 1777777776000^2 = \mathbf{12345678987654321}\,000064^2 \qquad (5.8)$$

$$0999919^2 + 18000^2 \qquad = \mathbf{1}\,000081^2$$
$$\mathbf{12}\,0999919^2 + 198000^2 \qquad = \mathbf{121}\,000081^2$$
$$\mathbf{1232}\,0999919^2 + 1998000^2 \qquad = \mathbf{12321}\,000081^2$$
$$\mathbf{123432}\,0999919^2 + 19998000^2 \qquad = \mathbf{1234321}\,000081^2$$
$$\mathbf{12345432}\,0999919^2 + 199998000^2 \qquad = \mathbf{123454321}\,000081^2$$
$$\mathbf{1234565432}\,0999919^2 + 1999998000^2 \qquad = \mathbf{12345654321}\,000081^2$$
$$\mathbf{123456765432}\,0999919^2 + 19999998000^2 \qquad = \mathbf{1234567654321}\,000081^2$$
$$\mathbf{12345678765432}\,0999919^2 + 199999998000^2 \qquad = \mathbf{123456787654321}\,000081^2$$
$$\mathbf{1234567898765432}\,0999919^2 + 1999999998000^2 = \mathbf{12345678987654321}\,000081^2 \qquad (5.9)$$

$$0999900^2 + 20000^2 = 1\,000100^2$$
$$12\,0999900^2 + 220000^2 = 121\,000100^2$$
$$1232\,0999900^2 + 2220000^2 = 12321\,000100^2$$
$$123432\,0999900^2 + 22220000^2 = 1234321\,000100^2$$
$$12345432\,0999900^2 + 222220000^2 = 123454321\,000100^2$$
$$1234565432\,0999900^2 + 2222220000^2 = 12345654321\,000100^2$$
$$123456765432\,0999900^2 + 22222220000^2 = 1234567654321\,000100^2$$
$$12345678765432\,0999900^2 + 222222220000^2 = 123456787654321\,000100^2$$
$$1234567898765432\,0999900^2 + 2222222220000^2 = 12345678987654321\,000100^2 \qquad (5.10)$$

$$0999879^2 + 22000^2 = 1\,000121^2$$
$$12\,0999879^2 + 242000^2 = 121\,000121^2$$
$$1232\,0999879^2 + 2442000^2 = 12321\,000121^2$$
$$123432\,0999879^2 + 24442000^2 = 1234321\,000121^2$$
$$12345432\,0999879^2 + 244442000^2 = 123454321\,000121^2$$
$$1234565432\,0999879^2 + 2444442000^2 = 12345654321\,000121^2$$
$$123456765432\,0999879^2 + 24444442000^2 = 1234567654321\,000121^2$$
$$12345678765432\,0999879^2 + 244444442000^2 = 123456787654321\,000121^2$$
$$1234567898765432\,0999879^2 + 2444444442000^2 = 12345678987654321\,000121^2 \qquad (5.11)$$

$$0999856^2 + 24000^2 = 1\,000144^2$$
$$12\,0999856^2 + 264000^2 = 121\,000144^2$$
$$1232\,0999856^2 + 2664000^2 = 12321\,000144^2$$
$$123432\,0999856^2 + 26664000^2 = 1234321\,000144^2$$
$$12345432\,0999856^2 + 266664000^2 = 123454321\,000144^2$$
$$1234565432\,0999856^2 + 2666664000^2 = 12345654321\,000144^2$$
$$123456765432\,0999856^2 + 26666664000^2 = 1234567654321\,000144^2$$
$$12345678765432\,0999856^2 + 266666664000^2 = 123456787654321\,000144^2$$
$$1234567898765432\,0999856^2 + 2666666664000^2 = 12345678987654321\,000144^2 \qquad (5.12)$$

$$0999831^2 + 26000^2 = \mathbf{1}\,000169^2$$
$$\mathbf{12}\,0999831^2 + 286000^2 = \mathbf{121}\,000169^2$$
$$\mathbf{1232}\,0999831^2 + 2886000^2 = \mathbf{12321}\,000169^2$$
$$\mathbf{123432}\,0999831^2 + 28886000^2 = \mathbf{1234321}\,000169^2$$
$$\mathbf{12345432}\,0999831^2 + 288886000^2 = \mathbf{123454321}\,000169^2$$
$$\mathbf{1234565432}\,0999831^2 + 2888886000^2 = \mathbf{12345654321}\,000169^2$$
$$\mathbf{123456765432}\,0999831^2 + 28888886000^2 = \mathbf{1234567654321}\,000169^2$$
$$\mathbf{12345678765432}\,0999831^2 + 288888886000^2 = \mathbf{123456787654321}\,000169^2$$
$$\mathbf{1234567898765432}\,0999831^2 + 2888888886000^2 = \mathbf{12345678987654321}\,000169^2 \qquad (5.13)$$

$$0999804^2 + 28000^2 = \mathbf{1}\,000196^2$$
$$\mathbf{12}\,0999804^2 + 308000^2 = \mathbf{121}\,000196^2$$
$$\mathbf{1232}\,0999804^2 + 3108000^2 = \mathbf{12321}\,000196^2$$
$$\mathbf{123432}\,0999804^2 + 31108000^2 = \mathbf{1234321}\,000196^2$$
$$\mathbf{12345432}\,0999804^2 + 311108000^2 = \mathbf{123454321}\,000196^2$$
$$\mathbf{1234565432}\,0999804^2 + 3111108000^2 = \mathbf{12345654321}\,000196^2$$
$$\mathbf{123456765432}\,0999804^2 + 31111108000^2 = \mathbf{1234567654321}\,000196^2$$
$$\mathbf{12345678765432}\,0999804^2 + 311111108000^2 = \mathbf{123456787654321}\,000196^2$$
$$\mathbf{1234567898765432}\,0999804^2 + 3111111108000^2 = \mathbf{12345678987654321}\,000196^2 \qquad (5.14)$$

$$0999775^2 + 30000^2 = \mathbf{1}\,000225^2$$
$$\mathbf{12}\,0999775^2 + 330000^2 = \mathbf{121}\,000225^2$$
$$\mathbf{1232}\,0999775^2 + 3330000^2 = \mathbf{12321}\,000225^2$$
$$\mathbf{123432}\,0999775^2 + 33330000^2 = \mathbf{1234321}\,000225^2$$
$$\mathbf{12345432}\,0999775^2 + 333330000^2 = \mathbf{123454321}\,000225^2$$
$$\mathbf{1234565432}\,0999775^2 + 3333330000^2 = \mathbf{12345654321}\,000225^2$$
$$\mathbf{123456765432}\,0999775^2 + 33333330000^2 = \mathbf{1234567654321}\,000225^2$$
$$\mathbf{12345678765432}\,0999775^2 + 333333330000^2 = \mathbf{123456787654321}\,000225^2$$
$$\mathbf{1234567898765432}\,0999775^2 + 3333333330000^2 = \mathbf{12345678987654321}\,000225^2 \qquad (5.15)$$

$$0999744^2 + 32000^2 = \mathbf{1}\,000256^2$$
$$\mathbf{12}\,0999744^2 + 352000^2 = \mathbf{121}\,000256^2$$
$$\mathbf{1232}\,0999744^2 + 3552000^2 = \mathbf{12321}\,000256^2$$
$$\mathbf{123432}\,0999744^2 + 35552000^2 = \mathbf{1234321}\,000256^2$$
$$\mathbf{12345432}\,0999744^2 + 355552000^2 = \mathbf{123454321}\,000256^2$$
$$\mathbf{1234565432}\,0999744^2 + 3555552000^2 = \mathbf{12345654321}\,000256^2$$
$$\mathbf{123456765432}\,0999744^2 + 35555552000^2 = \mathbf{1234567654321}\,000256^2$$
$$\mathbf{12345678765432}\,0999744^2 + 355555552000^2 = \mathbf{123456787654321}\,000256^2$$
$$\mathbf{1234567898765432}\,0999744^2 + 3555555552000^2 = \mathbf{12345678987654321}\,000256^2 \qquad (5.16)$$

$$0999711^2 + 34000^2 = \mathbf{1}\,000289^2$$
$$\mathbf{12}\,0999711^2 + 374000^2 = \mathbf{121}\,000289^2$$
$$\mathbf{1232}\,0999711^2 + 3774000^2 = \mathbf{12321}\,000289^2$$
$$\mathbf{123432}\,0999711^2 + 37774000^2 = \mathbf{1234321}\,000289^2$$
$$\mathbf{12345432}\,0999711^2 + 377774000^2 = \mathbf{123454321}\,000289^2$$
$$\mathbf{1234565432}\,0999711^2 + 3777774000^2 = \mathbf{12345654321}\,000289^2$$
$$\mathbf{123456765432}\,0999711^2 + 37777774000^2 = \mathbf{1234567654321}\,000289^2$$
$$\mathbf{12345678765432}\,0999711^2 + 377777774000^2 = \mathbf{123456787654321}\,000289^2$$
$$\mathbf{1234567898765432}\,0999711^2 + 3777777774000^2 = \mathbf{12345678987654321}\,000289^2 \qquad (5.17)$$

$$0999676^2 + 36000^2 = \mathbf{1}\,000324^2$$
$$\mathbf{12}\,0999676^2 + 396000^2 = \mathbf{121}\,000324^2$$
$$\mathbf{1232}\,0999676^2 + 3996000^2 = \mathbf{12321}\,000324^2$$
$$\mathbf{123432}\,0999676^2 + 39996000^2 = \mathbf{1234321}\,000324^2$$
$$\mathbf{12345432}\,0999676^2 + 399996000^2 = \mathbf{123454321}\,000324^2$$
$$\mathbf{1234565432}\,0999676^2 + 3999996000^2 = \mathbf{12345654321}\,000324^2$$
$$\mathbf{123456765432}\,0999676^2 + 39999996000^2 = \mathbf{1234567654321}\,000324^2$$
$$\mathbf{12345678765432}\,0999676^2 + 399999996000^2 = \mathbf{123456787654321}\,000324^2$$
$$\mathbf{1234567898765432}\,0999676^2 + 3999999996000^2 = \mathbf{12345678987654321}\,000324^2 \qquad (5.18)$$

$$0999639^2 + 38000^2 = \mathbf{1}\,000361^2$$
$$\mathbf{12}\,0999639^2 + 418000^2 = \mathbf{121}\,000361^2$$
$$\mathbf{1232}\,0999639^2 + 4218000^2 = \mathbf{12321}\,000361^2$$
$$\mathbf{123432}\,0999639^2 + 42218000^2 = \mathbf{1234321}\,000361^2$$
$$\mathbf{12345432}\,0999639^2 + 422218000^2 = \mathbf{123454321}\,000361^2$$
$$\mathbf{1234565432}\,0999639^2 + 4222218000^2 = \mathbf{12345654321}\,000361^2$$
$$\mathbf{123456765432}\,0999639^2 + 42222218000^2 = \mathbf{1234567654321}\,000361^2$$
$$\mathbf{12345678765432}\,0999639^2 + 422222218000^2 = \mathbf{123456787654321}\,000361^2$$
$$\mathbf{1234567898765432}\,0999639^2 + 4222222218000^2 = \mathbf{12345678987654321}\,000361^2 \quad (5.19)$$

5.1.2 For $n = 20, 21, 22, ..., 97, 98, 99$:

Let's consider

$m = 1000, 11000, 111000, 1111000, 11111000, 111111000, 1111111000, 11111111000, 111111111000$

in (1.1), then for each value of $n = 20, 21, 22, ..., 97, 98, 99$; there are 80 *palindromic-type pandigital Pythagorean patterns* given below. In each case, only first four values are written. The other 5 values can be written on similar lines as done in subsection 5.1.

$$0999600^2 + 40000^2 = \mathbf{1}\,000400^2$$
$$\mathbf{12}\,0999600^2 + 440000^2 = \mathbf{121}\,000400^2$$
$$\mathbf{1232}\,0999600^2 + 4440000^2 = \mathbf{12321}\,000400^2$$
$$\mathbf{123432}\,0999600^2 + 44440000^2 = \mathbf{1234321}\,000400^2 \quad (5.20)$$

$$0999559^2 + 42000^2 = \mathbf{1}\,000441^2$$
$$\mathbf{12}\,0999559^2 + 462000^2 = \mathbf{121}\,000441^2$$
$$\mathbf{1232}\,0999559^2 + 4662000^2 = \mathbf{12321}\,000441^2$$
$$\mathbf{123432}\,0999559^2 + 46662000^2 = \mathbf{1234321}\,000441^2 \quad (5.21)$$

$$0999516^2 + 44000^2 = \mathbf{1}\,000484^2$$
$$\mathbf{12}\,0999516^2 + 484000^2 = \mathbf{121}\,000484^2$$
$$\mathbf{1232}\,0999516^2 + 4884000^2 = \mathbf{12321}\,000484^2$$
$$\mathbf{123432}\,0999516^2 + 48884000^2 = \mathbf{1234321}\,000484^2 \quad (5.22)$$

$$0999471^2 + 46000^2 = \mathbf{1}\,000529^2$$
$$\mathbf{12}\,0999471^2 + 506000^2 = \mathbf{121}\,000529^2$$
$$\mathbf{1232}\,0999471^2 + 5106000^2 = \mathbf{12321}\,000529^2$$
$$\mathbf{123432}\,0999471^2 + 51106000^2 = \mathbf{1234321}\,000529^2 \quad (5.23)$$

$$0999424^2 + 48000^2 = \mathbf{1}\,000576^2$$
$$\mathbf{12}\,0999424^2 + 528000^2 = \mathbf{121}\,000576^2$$
$$\mathbf{1232}\,0999424^2 + 5328000^2 = \mathbf{12321}\,000576^2$$
$$\mathbf{123432}\,0999424^2 + 53328000^2 = \mathbf{1234321}\,000576^2 \quad (5.24)$$

$$0999375^2 + 50000^2 = \mathbf{1}\,000625^2$$
$$\mathbf{12}\,0999375^2 + 550000^2 = \mathbf{121}\,000625^2$$
$$\mathbf{1232}\,0999375^2 + 5550000^2 = \mathbf{12321}\,000625^2$$
$$\mathbf{123432}\,0999375^2 + 55550000^2 = \mathbf{1234321}\,000625^2 \quad (5.25)$$

$$0999324^2 + 52000^2 = \mathbf{1}\,000676^2$$
$$\mathbf{12}\,0999324^2 + 572000^2 = \mathbf{121}\,000676^2$$
$$\mathbf{1232}\,0999324^2 + 5772000^2 = \mathbf{12321}\,000676^2$$
$$\mathbf{123432}\,0999324^2 + 57772000^2 = \mathbf{1234321}\,000676^2 \quad (5.26)$$

$$0999271^2 + 54000^2 = \mathbf{1}\,000729^2$$
$$\mathbf{12}\,0999271^2 + 594000^2 = \mathbf{121}\,000729^2$$
$$\mathbf{1232}\,0999271^2 + 5994000^2 = \mathbf{12321}\,000729^2$$
$$\mathbf{123432}\,0999271^2 + 59994000^2 = \mathbf{1234321}\,000729^2 \quad (5.27)$$

$$0999216^2 + 56000^2 = \mathbf{1}\,000784^2$$
$$\mathbf{12}\,0999216^2 + 616000^2 = \mathbf{121}\,000784^2$$
$$\mathbf{1232}\,0999216^2 + 6216000^2 = \mathbf{12321}\,000784^2$$
$$\mathbf{123432}\,0999216^2 + 62216000^2 = \mathbf{1234321}\,000784^2 \quad (5.28)$$

$$0999159^2 + 58000^2 \quad = \mathbf{1}\,000841^2$$
$$\mathbf{12}\,0999159^2 + 638000^2 \quad = \mathbf{121}\,000841^2$$
$$\mathbf{1232}\,0999159^2 + 6438000^2 \quad = \mathbf{12321}\,000841^2$$
$$\mathbf{123432}\,0999159^2 + 64438000^2 = \mathbf{1234321}\,000841^2 \qquad (5.29)$$

$$0999100^2 + 60000^2 \quad = \mathbf{1}\,000900^2$$
$$\mathbf{12}\,0999100^2 + 660000^2 \quad = \mathbf{121}\,000900^2$$
$$\mathbf{1232}\,0999100^2 + 6660000^2 \quad = \mathbf{12321}\,000900^2$$
$$\mathbf{123432}\,0999100^2 + 66660000^2 = \mathbf{1234321}\,000900^2 \qquad (5.30)$$

$$0999039^2 + 62000^2 \quad = \mathbf{1}\,000961^2$$
$$\mathbf{12}\,0999039^2 + 682000^2 \quad = \mathbf{121}\,000961^2$$
$$\mathbf{1232}\,0999039^2 + 6882000^2 \quad = \mathbf{12321}\,000961^2$$
$$\mathbf{123432}\,0999039^2 + 68882000^2 = \mathbf{1234321}\,000961^2 \qquad (5.31)$$

$$0998976^2 + 64000^2 \quad = \mathbf{1}\,001024^2$$
$$\mathbf{12}\,0998976^2 + 704000^2 \quad = \mathbf{121}\,001024^2$$
$$\mathbf{1232}\,0998976^2 + 7104000^2 \quad = \mathbf{12321}\,001024^2$$
$$\mathbf{123432}\,0998976^2 + 71104000^2 = \mathbf{1234321}\,001024^2 \qquad (5.32)$$

$$0998911^2 + 66000^2 \quad = \mathbf{1}\,001089^2$$
$$\mathbf{12}\,0998911^2 + 726000^2 \quad = \mathbf{121}\,001089^2$$
$$\mathbf{1232}\,0998911^2 + 7326000^2 \quad = \mathbf{12321}\,001089^2$$
$$\mathbf{123432}\,0998911^2 + 73326000^2 = \mathbf{1234321}\,001089^2 \qquad (5.33)$$

$$0998844^2 + 68000^2 \quad = \mathbf{1}\,001156^2$$
$$\mathbf{12}\,0998844^2 + 748000^2 \quad = \mathbf{121}\,001156^2$$
$$\mathbf{1232}\,0998844^2 + 7548000^2 \quad = \mathbf{12321}\,001156^2$$
$$\mathbf{123432}\,0998844^2 + 75548000^2 = \mathbf{1234321}\,001156^2 \qquad (5.34)$$

$$0998775^2 + 70000^2 \quad = \mathbf{1}\,001225^2$$
$$\mathbf{12}\,0998775^2 + 770000^2 \quad = \mathbf{121}\,001225^2$$
$$\mathbf{1232}\,0998775^2 + 7770000^2 \quad = \mathbf{12321}\,001225^2$$
$$\mathbf{123432}\,0998775^2 + 77770000^2 = \mathbf{1234321}\,001225^2 \qquad (5.35)$$

$$0998704^2 + 72000^2 \quad = \mathbf{1}\,001296^2$$
$$\mathbf{12}\,0998704^2 + 792000^2 \quad = \mathbf{121}\,001296^2$$
$$\mathbf{1232}\,0998704^2 + 7992000^2 \quad = \mathbf{12321}\,001296^2$$
$$\mathbf{123432}\,0998704^2 + 79992000^2 = \mathbf{1234321}\,001296^2 \qquad (5.36)$$

$$0998631^2 + 74000^2 \quad = \mathbf{1}\,001369^2$$
$$\mathbf{12}\,0998631^2 + 814000^2 \quad = \mathbf{121}\,001369^2$$
$$\mathbf{1232}\,0998631^2 + 8214000^2 \quad = \mathbf{12321}\,001369^2$$
$$\mathbf{123432}\,0998631^2 + 82214000^2 = \mathbf{1234321}\,001369^2 \qquad (5.37)$$

$$0998556^2 + 76000^2 \quad = \mathbf{1}\,001444^2$$
$$\mathbf{12}\,0998556^2 + 836000^2 \quad = \mathbf{121}\,001444^2$$
$$\mathbf{1232}\,0998556^2 + 8436000^2 \quad = \mathbf{12321}\,001444^2$$
$$\mathbf{123432}\,0998556^2 + 84436000^2 = \mathbf{1234321}\,001444^2 \qquad (5.38)$$

$$0998479^2 + 78000^2 \quad = \mathbf{1}\,001521^2$$
$$\mathbf{12}\,0998479^2 + 858000^2 \quad = \mathbf{121}\,001521^2$$
$$\mathbf{1232}\,0998479^2 + 8658000^2 \quad = \mathbf{12321}\,001521^2$$
$$\mathbf{123432}\,0998479^2 + 86658000^2 = \mathbf{1234321}\,001521^2 \qquad (5.39)$$

$$0998400^2 + 80000^2 \quad = \mathbf{1}\,001600^2$$
$$\mathbf{12}\,0998400^2 + 880000^2 \quad = \mathbf{121}\,001600^2$$
$$\mathbf{1232}\,0998400^2 + 8880000^2 \quad = \mathbf{12321}\,001600^2$$
$$\mathbf{123432}\,0998400^2 + 88880000^2 = \mathbf{1234321}\,001600^2 \qquad (5.40)$$

$$0998319^2 + 82000^2 \quad = \mathbf{1}\,001681^2$$
$$\mathbf{12}\,0998319^2 + 902000^2 \quad = \mathbf{121}\,001681^2$$
$$\mathbf{1232}\,0998319^2 + 9102000^2 \quad = \mathbf{12321}\,001681^2$$
$$\mathbf{123432}\,0998319^2 + 91102000^2 = \mathbf{1234321}\,001681^2 \qquad (5.41)$$

$$0998236^2 + 84000^2 \quad = \mathbf{1}\,001764^2$$
$$\mathbf{12}\,0998236^2 + 924000^2 \quad = \mathbf{121}\,001764^2$$
$$\mathbf{1232}\,0998236^2 + 9324000^2 \quad = \mathbf{12321}\,001764^2$$
$$\mathbf{123432}\,0998236^2 + 93324000^2 = \mathbf{1234321}\,001764^2 \qquad (5.42)$$

$$0998151^2 + 86000^2 \quad = \mathbf{1}\,001849^2$$
$$\mathbf{12}\,0998151^2 + 946000^2 \quad = \mathbf{121}\,001849^2$$
$$\mathbf{1232}\,0998151^2 + 9546000^2 \quad = \mathbf{12321}\,001849^2$$
$$\mathbf{123432}\,0998151^2 + 95546000^2 = \mathbf{1234321}\,001849^2 \qquad (5.43)$$

$$0998064^2 + 88000^2 \quad = \mathbf{1}\,001936^2$$
$$\mathbf{12}\,0998064^2 + 968000^2 \quad = \mathbf{121}\,001936^2$$
$$\mathbf{1232}\,0998064^2 + 9768000^2 \quad = \mathbf{12321}\,001936^2$$
$$\mathbf{123432}\,0998064^2 + 97768000^2 = \mathbf{1234321}\,001936^2 \qquad (5.44)$$

$$0997975^2 + 90000^2 \quad = \mathbf{1}\,002025^2$$
$$\mathbf{12}\,0997975^2 + 990000^2 \quad = \mathbf{121}\,002025^2$$
$$\mathbf{1232}\,0997975^2 + 9990000^2 \quad = \mathbf{12321}\,002025^2$$
$$\mathbf{123432}\,0997975^2 + 99990000^2 = \mathbf{1234321}\,002025^2 \qquad (5.45)$$

$0997884^2 + 92000^2 \qquad = \mathbf{1}\,002116^2$

$\mathbf{12}\,0997884^2 + 1012000^2 \quad = \mathbf{121}\,002116^2$

$\mathbf{1232}\,0997884^2 + 10212000^2 \ = \mathbf{12321}\,002116^2$

$\mathbf{123432}\,0997884^2 + 102212000^2 = \mathbf{1234321}\,002116^2 \qquad (5.46)$

$0997791^2 + 94000^2 \qquad = \mathbf{1}\,002209^2$

$\mathbf{12}\,0997791^2 + 1034000^2 \quad = \mathbf{121}\,002209^2$

$\mathbf{1232}\,0997791^2 + 10434000^2 \ = \mathbf{12321}\,002209^2$

$\mathbf{123432}\,0997791^2 + 104434000^2 = \mathbf{1234321}\,002209^2 \qquad (5.47)$

$0997696^2 + 96000^2 \qquad = \mathbf{1}\,002304^2$

$\mathbf{12}\,0997696^2 + 1056000^2 \quad = \mathbf{121}\,002304^2$

$\mathbf{1232}\,0997696^2 + 10656000^2 \ = \mathbf{12321}\,002304^2$

$\mathbf{123432}\,0997696^2 + 106656000^2 = \mathbf{1234321}\,002304^2 \qquad (5.48)$

$0997599^2 + 98000^2 \qquad = \mathbf{1}\,002401^2$

$\mathbf{12}\,0997599^2 + 1078000^2 \quad = \mathbf{121}\,002401^2$

$\mathbf{1232}\,0997599^2 + 10878000^2 \ = \mathbf{12321}\,002401^2$

$\mathbf{123432}\,0997599^2 + 108878000^2 = \mathbf{1234321}\,002401^2 \qquad (5.49)$

$0997500^2 + 100000^2 \qquad = \mathbf{1}\,002500^2$

$\mathbf{12}\,0997500^2 + 1100000^2 \quad = \mathbf{121}\,002500^2$

$\mathbf{1232}\,0997500^2 + 11100000^2 \ = \mathbf{12321}\,002500^2$

$\mathbf{123432}\,0997500^2 + 111100000^2 = \mathbf{1234321}\,002500^2 \qquad (5.50)$

$0997399^2 + 102000^2 \qquad = \mathbf{1}\,002601^2$

$\mathbf{12}\,0997399^2 + 1122000^2 \quad = \mathbf{121}\,002601^2$

$\mathbf{1232}\,0997399^2 + 11322000^2 \ = \mathbf{12321}\,002601^2$

$\mathbf{123432}\,0997399^2 + 113322000^2 = \mathbf{1234321}\,002601^2 \qquad (5.51)$

$0997296^2 + 104000^2 \qquad = \mathbf{1}\,002704^2$

$\mathbf{12}\,0997296^2 + 1144000^2 \quad = \mathbf{121}\,002704^2$

$\mathbf{1232}\,0997296^2 + 11544000^2 \ = \mathbf{12321}\,002704^2$

$\mathbf{123432}\,0997296^2 + 115544000^2 = \mathbf{1234321}\,002704^2 \qquad (5.52)$

$0997191^2 + 106000^2 \qquad = \mathbf{1}\,002809^2$

$\mathbf{12}\,0997191^2 + 1166000^2 \quad = \mathbf{121}\,002809^2$

$\mathbf{1232}\,0997191^2 + 11766000^2 \ = \mathbf{12321}\,002809^2$

$\mathbf{123432}\,0997191^2 + 117766000^2 = \mathbf{1234321}\,002809^2 \qquad (5.53)$

$0997084^2 + 108000^2 \qquad = \mathbf{1}\,002916^2$

$\mathbf{12}\,0997084^2 + 1188000^2 \quad = \mathbf{121}\,002916^2$

$\mathbf{1232}\,0997084^2 + 11988000^2 \ = \mathbf{12321}\,002916^2$

$\mathbf{123432}\,0997084^2 + 119988000^2 = \mathbf{1234321}\,002916^2 \qquad (5.54)$

$0996975^2 + 110000^2 \qquad = \mathbf{1}\,003025^2$

$\mathbf{12}\,0996975^2 + 1210000^2 \quad = \mathbf{121}\,003025^2$

$\mathbf{1232}\,0996975^2 + 12210000^2 \ = \mathbf{12321}\,003025^2$

$\mathbf{123432}\,0996975^2 + 122210000^2 = \mathbf{1234321}\,003025^2 \qquad (5.55)$

$0996864^2 + 112000^2 \qquad = \mathbf{1}\,003136^2$

$\mathbf{12}\,0996864^2 + 1232000^2 \quad = \mathbf{121}\,003136^2$

$\mathbf{1232}\,0996864^2 + 12432000^2 \ = \mathbf{12321}\,003136^2$

$\mathbf{123432}\,0996864^2 + 124432000^2 = \mathbf{1234321}\,003136^2 \qquad (5.56)$

$0996751^2 + 114000^2 \qquad = \mathbf{1}\,003249^2$

$\mathbf{12}\,0996751^2 + 1254000^2 \quad = \mathbf{121}\,003249^2$

$\mathbf{1232}\,0996751^2 + 12654000^2 \ = \mathbf{12321}\,003249^2$

$\mathbf{123432}\,0996751^2 + 126654000^2 = \mathbf{1234321}\,003249^2 \qquad (5.57)$

$0996636^2 + 116000^2 \qquad = \mathbf{1}\,003364^2$

$\mathbf{12}\,0996636^2 + 1276000^2 \quad = \mathbf{121}\,003364^2$

$\mathbf{1232}\,0996636^2 + 12876000^2 \ = \mathbf{12321}\,003364^2$

$\mathbf{123432}\,0996636^2 + 128876000^2 = \mathbf{1234321}\,003364^2 \qquad (5.58)$

$0996519^2 + 118000^2 \qquad = \mathbf{1}\,003481^2$

$\mathbf{12}\,0996519^2 + 1298000^2 \quad = \mathbf{121}\,003481^2$

$\mathbf{1232}\,0996519^2 + 13098000^2 \ = \mathbf{12321}\,003481^2$

$\mathbf{123432}\,0996519^2 + 131098000^2 = \mathbf{1234321}\,003481^2 \qquad (5.59)$

$0996400^2 + 120000^2 \qquad = \mathbf{1}\,003600^2$

$\mathbf{12}\,0996400^2 + 1320000^2 \quad = \mathbf{121}\,003600^2$

$\mathbf{1232}\,0996400^2 + 13320000^2 \ = \mathbf{12321}\,003600^2$

$\mathbf{123432}\,0996400^2 + 133320000^2 = \mathbf{1234321}\,003600^2 \qquad (5.60)$

$0996279^2 + 122000^2 \qquad = \mathbf{1}\,003721^2$

$\mathbf{12}\,0996279^2 + 1342000^2 \quad = \mathbf{121}\,003721^2$

$\mathbf{1232}\,0996279^2 + 13542000^2 \ = \mathbf{12321}\,003721^2$

$\mathbf{123432}\,0996279^2 + 135542000^2 = \mathbf{1234321}\,003721^2 \qquad (5.61)$

$0996156^2 + 124000^2 \qquad = \mathbf{1}\,003844^2$

$\mathbf{12}\,0996156^2 + 1364000^2 \quad = \mathbf{121}\,003844^2$

$\mathbf{1232}\,0996156^2 + 13764000^2 \ = \mathbf{12321}\,003844^2$

$\mathbf{123432}\,0996156^2 + 137764000^2 = \mathbf{1234321}\,003844^2 \qquad (5.62)$

$$0996031^2 + 126000^2 \quad = \mathbf{1}\,003969^2$$
$$\mathbf{12}\,0996031^2 + 1386000^2 \quad = \mathbf{121}\,003969^2$$
$$\mathbf{1232}\,0996031^2 + 13986000^2 \quad = \mathbf{12321}\,003969^2$$
$$\mathbf{123432}\,0996031^2 + 139986000^2 = \mathbf{1234321}\,003969^2 \quad (5.63)$$

$$0995904^2 + 128000^2 \quad = \mathbf{1}\,004096^2$$
$$\mathbf{12}\,0995904^2 + 1408000^2 \quad = \mathbf{121}\,004096^2$$
$$\mathbf{1232}\,0995904^2 + 14208000^2 \quad = \mathbf{12321}\,004096^2$$
$$\mathbf{123432}\,0995904^2 + 142208000^2 = \mathbf{1234321}\,004096^2 \quad (5.64)$$

$$0995775^2 + 130000^2 \quad = \mathbf{1}\,004225^2$$
$$\mathbf{12}\,0995775^2 + 1430000^2 \quad = \mathbf{121}\,004225^2$$
$$\mathbf{1232}\,0995775^2 + 14430000^2 \quad = \mathbf{12321}\,004225^2$$
$$\mathbf{123432}\,0995775^2 + 144430000^2 = \mathbf{1234321}\,004225^2 \quad (5.65)$$

$$0995644^2 + 132000^2 \quad = \mathbf{1}\,004356^2$$
$$\mathbf{12}\,0995644^2 + 1452000^2 \quad = \mathbf{121}\,004356^2$$
$$\mathbf{1232}\,0995644^2 + 14652000^2 \quad = \mathbf{12321}\,004356^2$$
$$\mathbf{123432}\,0995644^2 + 146652000^2 = \mathbf{1234321}\,004356^2 \quad (5.66)$$

$$0995511^2 + 134000^2 \quad = \mathbf{1}\,004489^2$$
$$\mathbf{12}\,0995511^2 + 1474000^2 \quad = \mathbf{121}\,004489^2$$
$$\mathbf{1232}\,0995511^2 + 14874000^2 \quad = \mathbf{12321}\,004489^2$$
$$\mathbf{123432}\,0995511^2 + 148874000^2 = \mathbf{1234321}\,004489^2 \quad (5.67)$$

$$0995376^2 + 136000^2 \quad = \mathbf{1}\,004624^2$$
$$\mathbf{12}\,0995376^2 + 1496000^2 \quad = \mathbf{121}\,004624^2$$
$$\mathbf{1232}\,0995376^2 + 15096000^2 \quad = \mathbf{12321}\,004624^2$$
$$\mathbf{123432}\,0995376^2 + 151096000^2 = \mathbf{1234321}\,004624^2 \quad (5.68)$$

$$0995239^2 + 138000^2 \quad = \mathbf{1}\,004761^2$$
$$\mathbf{12}\,0995239^2 + 1518000^2 \quad = \mathbf{121}\,004761^2$$
$$\mathbf{1232}\,0995239^2 + 15318000^2 \quad = \mathbf{12321}\,004761^2$$
$$\mathbf{123432}\,0995239^2 + 153318000^2 = \mathbf{1234321}\,004761^2 \quad (5.69)$$

$$0995100^2 + 140000^2 \quad = \mathbf{1}\,004900^2$$
$$\mathbf{12}\,0995100^2 + 1540000^2 \quad = \mathbf{121}\,004900^2$$
$$\mathbf{1232}\,0995100^2 + 15540000^2 \quad = \mathbf{12321}\,004900^2$$
$$\mathbf{123432}\,0995100^2 + 155540000^2 = \mathbf{1234321}\,004900^2 \quad (5.70)$$

$$0994959^2 + 142000^2 \quad = \mathbf{1}\,005041^2$$
$$\mathbf{12}\,0994959^2 + 1562000^2 \quad = \mathbf{121}\,005041^2$$
$$\mathbf{1232}\,0994959^2 + 15762000^2 \quad = \mathbf{12321}\,005041^2$$
$$\mathbf{123432}\,0994959^2 + 157762000^2 = \mathbf{1234321}\,005041^2 \quad (5.71)$$

$$0994816^2 + 144000^2 \quad = \mathbf{1}\,005184^2$$
$$\mathbf{12}\,0994816^2 + 1584000^2 \quad = \mathbf{121}\,005184^2$$
$$\mathbf{1232}\,0994816^2 + 15984000^2 \quad = \mathbf{12321}\,005184^2$$
$$\mathbf{123432}\,0994816^2 + 159984000^2 = \mathbf{1234321}\,005184^2 \quad (5.72)$$

$$0994671^2 + 146000^2 \quad = \mathbf{1}\,005329^2$$
$$\mathbf{12}\,0994671^2 + 1606000^2 \quad = \mathbf{121}\,005329^2$$
$$\mathbf{1232}\,0994671^2 + 16206000^2 \quad = \mathbf{12321}\,005329^2$$
$$\mathbf{123432}\,0994671^2 + 162206000^2 = \mathbf{1234321}\,005329^2 \quad (5.73)$$

$$0994524^2 + 148000^2 \quad = \mathbf{1}\,005476^2$$
$$\mathbf{12}\,0994524^2 + 1628000^2 \quad = \mathbf{121}\,005476^2$$
$$\mathbf{1232}\,0994524^2 + 16428000^2 \quad = \mathbf{12321}\,005476^2$$
$$\mathbf{123432}\,0994524^2 + 164428000^2 = \mathbf{1234321}\,005476^2 \quad (5.74)$$

$$0994375^2 + 150000^2 \quad = \mathbf{1}\,005625^2$$
$$\mathbf{12}\,0994375^2 + 1650000^2 \quad = \mathbf{121}\,005625^2$$
$$\mathbf{1232}\,0994375^2 + 16650000^2 \quad = \mathbf{12321}\,005625^2$$
$$\mathbf{123432}\,0994375^2 + 166650000^2 = \mathbf{1234321}\,005625^2 \quad (5.75)$$

$$0994224^2 + 152000^2 \quad = \mathbf{1}\,005776^2$$
$$\mathbf{12}\,0994224^2 + 1672000^2 \quad = \mathbf{121}\,005776^2$$
$$\mathbf{1232}\,0994224^2 + 16872000^2 \quad = \mathbf{12321}\,005776^2$$
$$\mathbf{123432}\,0994224^2 + 168872000^2 = \mathbf{1234321}\,005776^2 \quad (5.76)$$

$$0994071^2 + 154000^2 \quad = \mathbf{1}\,005929^2$$
$$\mathbf{12}\,0994071^2 + 1694000^2 \quad = \mathbf{121}\,005929^2$$
$$\mathbf{1232}\,0994071^2 + 17094000^2 \quad = \mathbf{12321}\,005929^2$$
$$\mathbf{123432}\,0994071^2 + 171094000^2 = \mathbf{1234321}\,005929^2 \quad (5.77)$$

$$0993916^2 + 156000^2 \quad = \mathbf{1}\,006084^2$$
$$\mathbf{12}\,0993916^2 + 1716000^2 \quad = \mathbf{121}\,006084^2$$
$$\mathbf{1232}\,0993916^2 + 17316000^2 \quad = \mathbf{12321}\,006084^2$$
$$\mathbf{123432}\,0993916^2 + 173316000^2 = \mathbf{1234321}\,006084^2 \quad (5.78)$$

$$0993759^2 + 158000^2 \quad = \mathbf{1}\,006241^2$$
$$\mathbf{12}\,0993759^2 + 1738000^2 \quad = \mathbf{121}\,006241^2$$
$$\mathbf{1232}\,0993759^2 + 17538000^2 \quad = \mathbf{12321}\,006241^2$$
$$\mathbf{123432}\,0993759^2 + 175538000^2 = \mathbf{1234321}\,006241^2 \quad (5.79)$$

$$0993600^2 + 160000^2 = \mathbf{1}\,006400^2$$
$$\mathbf{12}\,0993600^2 + 1760000^2 = \mathbf{121}\,006400^2$$
$$\mathbf{1232}\,0993600^2 + 17760000^2 = \mathbf{12321}\,006400^2$$
$$\mathbf{123432}\,0993600^2 + 177760000^2 = \mathbf{1234321}\,006400^2 \quad (5.80)$$

$$0993439^2 + 162000^2 = \mathbf{1}\,006561^2$$
$$\mathbf{12}\,0993439^2 + 1782000^2 = \mathbf{121}\,006561^2$$
$$\mathbf{1232}\,0993439^2 + 17982000^2 = \mathbf{12321}\,006561^2$$
$$\mathbf{123432}\,0993439^2 + 179982000^2 = \mathbf{1234321}\,006561^2 \quad (5.81)$$

$$0993276^2 + 164000^2 = \mathbf{1}\,006724^2$$
$$\mathbf{12}\,0993276^2 + 1804000^2 = \mathbf{121}\,006724^2$$
$$\mathbf{1232}\,0993276^2 + 18204000^2 = \mathbf{12321}\,006724^2$$
$$\mathbf{123432}\,0993276^2 + 182204000^2 = \mathbf{1234321}\,006724^2 \quad (5.82)$$

$$0993111^2 + 166000^2 = \mathbf{1}\,006889^2$$
$$\mathbf{12}\,0993111^2 + 1826000^2 = \mathbf{121}\,006889^2$$
$$\mathbf{1232}\,0993111^2 + 18426000^2 = \mathbf{12321}\,006889^2$$
$$\mathbf{123432}\,0993111^2 + 184426000^2 = \mathbf{1234321}\,006889^2 \quad (5.83)$$

$$0992944^2 + 168000^2 = \mathbf{1}\,007056^2$$
$$\mathbf{12}\,0992944^2 + 1848000^2 = \mathbf{121}\,007056^2$$
$$\mathbf{1232}\,0992944^2 + 18648000^2 = \mathbf{12321}\,007056^2$$
$$\mathbf{123432}\,0992944^2 + 186648000^2 = \mathbf{1234321}\,007056^2 \quad (5.84)$$

$$0992775^2 + 170000^2 = \mathbf{1}\,007225^2$$
$$\mathbf{12}\,0992775^2 + 1870000^2 = \mathbf{121}\,007225^2$$
$$\mathbf{1232}\,0992775^2 + 18870000^2 = \mathbf{12321}\,007225^2$$
$$\mathbf{123432}\,0992775^2 + 188870000^2 = \mathbf{1234321}\,007225^2 \quad (5.85)$$

$$0992604^2 + 172000^2 = \mathbf{1}\,007396^2$$
$$\mathbf{12}\,0992604^2 + 1892000^2 = \mathbf{121}\,007396^2$$
$$\mathbf{1232}\,0992604^2 + 19092000^2 = \mathbf{12321}\,007396^2$$
$$\mathbf{123432}\,0992604^2 + 191092000^2 = \mathbf{1234321}\,007396^2 \quad (5.86)$$

$$0992431^2 + 174000^2 = \mathbf{1}\,007569^2$$
$$\mathbf{12}\,0992431^2 + 1914000^2 = \mathbf{121}\,007569^2$$
$$\mathbf{1232}\,0992431^2 + 19314000^2 = \mathbf{12321}\,007569^2$$
$$\mathbf{123432}\,0992431^2 + 193314000^2 = \mathbf{1234321}\,007569^2 \quad (5.87)$$

$$0992256^2 + 176000^2 = \mathbf{1}\,007744^2$$
$$\mathbf{12}\,0992256^2 + 1936000^2 = \mathbf{121}\,007744^2$$
$$\mathbf{1232}\,0992256^2 + 19536000^2 = \mathbf{12321}\,007744^2$$
$$\mathbf{123432}\,0992256^2 + 195536000^2 = \mathbf{1234321}\,007744^2 \quad (5.88)$$

$$0992079^2 + 178000^2 = \mathbf{1}\,007921^2$$
$$\mathbf{12}\,0992079^2 + 1958000^2 = \mathbf{121}\,007921^2$$
$$\mathbf{1232}\,0992079^2 + 19758000^2 = \mathbf{12321}\,007921^2$$
$$\mathbf{123432}\,0992079^2 + 197758000^2 = \mathbf{1234321}\,007921^2 \quad (5.89)$$

$$0991900^2 + 180000^2 = \mathbf{1}\,008100^2$$
$$\mathbf{12}\,0991900^2 + 1980000^2 = \mathbf{121}\,008100^2$$
$$\mathbf{1232}\,0991900^2 + 19980000^2 = \mathbf{12321}\,008100^2$$
$$\mathbf{123432}\,0991900^2 + 199980000^2 = \mathbf{1234321}\,008100^2 \quad (5.90)$$

$$0991719^2 + 182000^2 = \mathbf{1}\,008281^2$$
$$\mathbf{12}\,0991719^2 + 2002000^2 = \mathbf{121}\,008281^2$$
$$\mathbf{1232}\,0991719^2 + 20202000^2 = \mathbf{12321}\,008281^2$$
$$\mathbf{123432}\,0991719^2 + 202202000^2 = \mathbf{1234321}\,008281^2 \quad (5.91)$$

$$0991536^2 + 184000^2 = \mathbf{1}\,008464^2$$
$$\mathbf{12}\,0991536^2 + 2024000^2 = \mathbf{121}\,008464^2$$
$$\mathbf{1232}\,0991536^2 + 20424000^2 = \mathbf{12321}\,008464^2$$
$$\mathbf{123432}\,0991536^2 + 204424000^2 = \mathbf{1234321}\,008464^2 \quad (5.92)$$

$$0991351^2 + 186000^2 = \mathbf{1}\,008649^2$$
$$\mathbf{12}\,0991351^2 + 2046000^2 = \mathbf{121}\,008649^2$$
$$\mathbf{1232}\,0991351^2 + 20646000^2 = \mathbf{12321}\,008649^2$$
$$\mathbf{123432}\,0991351^2 + 206646000^2 = \mathbf{1234321}\,008649^2 \quad (5.93)$$

$$0991164^2 + 188000^2 = \mathbf{1}\,008836^2$$
$$\mathbf{12}\,0991164^2 + 2068000^2 = \mathbf{121}\,008836^2$$
$$\mathbf{1232}\,0991164^2 + 20868000^2 = \mathbf{12321}\,008836^2$$
$$\mathbf{123432}\,0991164^2 + 208868000^2 = \mathbf{1234321}\,008836^2 \quad (5.94)$$

$$0990975^2 + 190000^2 = \mathbf{1}\,009025^2$$
$$\mathbf{12}\,0990975^2 + 2090000^2 = \mathbf{121}\,009025^2$$
$$\mathbf{1232}\,0990975^2 + 21090000^2 = \mathbf{12321}\,009025^2$$
$$\mathbf{123432}\,0990975^2 + 211090000^2 = \mathbf{1234321}\,009025^2 \quad (5.95)$$

$$0990784^2 + 192000^2 = \mathbf{1}\,009216^2$$
$$\mathbf{12}\,0990784^2 + 2112000^2 = \mathbf{121}\,009216^2$$
$$\mathbf{1232}\,0990784^2 + 21312000^2 = \mathbf{12321}\,009216^2$$
$$\mathbf{123432}\,0990784^2 + 213312000^2 = \mathbf{1234321}\,009216^2 \quad (5.96)$$

$$0990591^2 + 194000^2 \quad = \mathbf{1}\,009409^2$$
$$\mathbf{12}\,0990591^2 + 2134000^2 \quad = \mathbf{121}\,009409^2$$
$$\mathbf{1232}\,0990591^2 + 21534000^2 \ = \mathbf{12321}\,009409^2$$
$$\mathbf{123432}\,0990591^2 + 215534000^2 = \mathbf{1234321}\,009409^2 \quad (5.97)$$

$$0990396^2 + 196000^2 \quad = \mathbf{1}\,009604^2$$
$$\mathbf{12}\,0990396^2 + 2156000^2 \quad = \mathbf{121}\,009604^2$$
$$\mathbf{1232}\,0990396^2 + 21756000^2 \ = \mathbf{12321}\,009604^2$$
$$\mathbf{123432}\,0990396^2 + 217756000^2 = \mathbf{1234321}\,009604^2 \quad (5.98)$$

$$0990199^2 + 198000^2 \quad = \mathbf{1}\,009801^2$$
$$\mathbf{12}\,0990199^2 + 2178000^2 \quad = \mathbf{121}\,009801^2$$
$$\mathbf{1232}\,0990199^2 + 21978000^2 \ = \mathbf{12321}\,009801^2$$
$$\mathbf{123432}\,0990199^2 + 219978000^2 = \mathbf{1234321}\,009801^2 \quad (5.99)$$

5.2   For $n = 100, \ 101, \ 101, \ ..., 197, \ 198, \ 199$:

Let's consider

$m = 1000, \ 11000, \ 111000, \ 1111000, \ 11111000, \ 111111000, \ 1111111000, \ 11111111000, \ 111111111000$

in (1.1), then for each value of $n = 100, \ 101, \ 101, \ ..., 197, \ 198, \ 199$; there are 100 *palindromic-type pandigital Pythagorean patterns* given below. In each case, only first four values are written. The other 5 values can be written on similar lines as done in subsection 5.1.1.

$$0990000^2 + 200000^2 = \mathbf{1}\,010000^2$$
$$\mathbf{12}\,0990000^2 + 2200000^2 = \mathbf{121}\,010000^2$$
$$\mathbf{1232}\,0990000^2 + 22200000^2 = \mathbf{12321}\,010000^2$$
$$\mathbf{123432}\,0990000^2 + 222200000^2 = \mathbf{1234321}\,010000^2 \quad (5.100)$$

$$0989799^2 + 202000^2 = \mathbf{1}\,010201^2$$
$$\mathbf{12}\,0989799^2 + 2222000^2 = \mathbf{121}\,010201^2$$
$$\mathbf{1232}\,0989799^2 + 22422000^2 = \mathbf{12321}\,010201^2$$
$$\mathbf{123432}\,0989799^2 + 224422000^2 = \mathbf{1234321}\,010201^2 \quad (5.101)$$

$$0989596^2 + 204000^2 = \mathbf{1}\,010404^2$$
$$\mathbf{12}\,0989596^2 + 2244000^2 = \mathbf{121}\,010404^2$$
$$\mathbf{1232}\,0989596^2 + 22644000^2 = \mathbf{12321}\,010404^2$$
$$\mathbf{123432}\,0989596^2 + 226644000^2 = \mathbf{1234321}\,010404^2 \quad (5.102)$$

$$0989391^2 + 206000^2 = \mathbf{1}\,010609^2$$
$$\mathbf{12}\,0989391^2 + 2266000^2 = \mathbf{121}\,010609^2$$
$$\mathbf{1232}\,0989391^2 + 22866000^2 = \mathbf{12321}\,010609^2$$
$$\mathbf{123432}\,0989391^2 + 228866000^2 = \mathbf{1234321}\,010609^2 \quad (5.103)$$

$$0989184^2 + 208000^2 = \mathbf{1}\,010816^2$$
$$\mathbf{12}\,0989184^2 + 2288000^2 = \mathbf{121}\,010816^2$$
$$\mathbf{1232}\,0989184^2 + 23088000^2 = \mathbf{12321}\,010816^2$$
$$\mathbf{123432}\,0989184^2 + 231088000^2 = \mathbf{1234321}\,010816^2 \quad (5.104)$$

$$0988975^2 + 210000^2 = \mathbf{1}\,011025^2$$
$$\mathbf{12}\,0988975^2 + 2310000^2 = \mathbf{121}\,011025^2$$
$$\mathbf{1232}\,0988975^2 + 23310000^2 = \mathbf{12321}\,011025^2$$
$$\mathbf{123432}\,0988975^2 + 233310000^2 = \mathbf{1234321}\,011025^2 \quad (5.105)$$

$$0988764^2 + 212000^2 = \mathbf{1}\,011236^2$$
$$\mathbf{12}\,0988764^2 + 2332000^2 = \mathbf{121}\,011236^2$$
$$\mathbf{1232}\,0988764^2 + 23532000^2 = \mathbf{12321}\,011236^2$$
$$\mathbf{123432}\,0988764^2 + 235532000^2 = \mathbf{1234321}\,011236^2 \quad (5.106)$$

$$0988551^2 + 214000^2 = \mathbf{1}\,011449^2$$
$$\mathbf{12}\,0988551^2 + 2354000^2 = \mathbf{121}\,011449^2$$
$$\mathbf{1232}\,0988551^2 + 23754000^2 = \mathbf{12321}\,011449^2$$
$$\mathbf{123432}\,0988551^2 + 237754000^2 = \mathbf{1234321}\,011449^2 \quad (5.107)$$

$$0988336^2 + 216000^2 = \mathbf{1}\,011664^2$$
$$\mathbf{12}\,0988336^2 + 2376000^2 = \mathbf{121}\,011664^2$$
$$\mathbf{1232}\,0988336^2 + 23976000^2 = \mathbf{12321}\,011664^2$$
$$\mathbf{123432}\,0988336^2 + 239976000^2 = \mathbf{1234321}\,011664^2 \quad (5.108)$$

$$0988119^2 + 218000^2 = \mathbf{1}\,011881^2$$
$$\mathbf{12}\,0988119^2 + 2398000^2 = \mathbf{121}\,011881^2$$
$$\mathbf{1232}\,0988119^2 + 24198000^2 = \mathbf{12321}\,011881^2$$
$$\mathbf{123432}\,0988119^2 + 242198000^2 = \mathbf{1234321}\,011881^2 \quad (5.109)$$

$$0987900^2 + 220000^2 = \mathbf{1}\,012100^2$$
$$\mathbf{12}\,0987900^2 + 2420000^2 = \mathbf{121}\,012100^2$$
$$\mathbf{1232}\,0987900^2 + 24420000^2 = \mathbf{12321}\,012100^2$$
$$\mathbf{123432}\,0987900^2 + 244420000^2 = \mathbf{1234321}\,012100^2 \quad (5.110)$$

$$0987679^2 + 222000^2 = \mathbf{1}\,012321^2$$
$$\mathbf{12}\,0987679^2 + 2442000^2 = \mathbf{121}\,012321^2$$
$$\mathbf{1232}\,0987679^2 + 24642000^2 = \mathbf{12321}\,012321^2$$
$$\mathbf{123432}\,0987679^2 + 246642000^2 = \mathbf{1234321}\,012321^2 \quad (5.111)$$

$$0987456^2 + 224000^2 = \mathbf{1}\,012544^2$$
$$\mathbf{12}\,0987456^2 + 2464000^2 = \mathbf{121}\,012544^2$$
$$\mathbf{1232}\,0987456^2 + 24864000^2 = \mathbf{12321}\,012544^2$$
$$\mathbf{123432}\,0987456^2 + 248864000^2 = \mathbf{1234321}\,012544^2 \quad (5.112)$$

$$0987231^2 + 226000^2 = \mathbf{1}\,012769^2$$
$$\mathbf{12}\,0987231^2 + 2486000^2 = \mathbf{121}\,012769^2$$
$$\mathbf{1232}\,0987231^2 + 25086000^2 = \mathbf{12321}\,012769^2$$
$$\mathbf{123432}\,0987231^2 + 251086000^2 = \mathbf{1234321}\,012769^2 \quad (5.113)$$

$$0987004^2 + 228000^2 = \mathbf{1}\,012996^2$$
$$\mathbf{12}\,0987004^2 + 2508000^2 = \mathbf{121}\,012996^2$$
$$\mathbf{1232}\,0987004^2 + 25308000^2 = \mathbf{12321}\,012996^2$$
$$\mathbf{123432}\,0987004^2 + 253308000^2 = \mathbf{1234321}\,012996^2 \quad (5.114)$$

$$0986775^2 + 230000^2 = \mathbf{1}\,013225^2$$
$$\mathbf{12}\,0986775^2 + 2530000^2 = \mathbf{121}\,013225^2$$
$$\mathbf{1232}\,0986775^2 + 25530000^2 = \mathbf{12321}\,013225^2$$
$$\mathbf{123432}\,0986775^2 + 255530000^2 = \mathbf{1234321}\,013225^2 \quad (5.115)$$

$$0986544^2 + 232000^2 = \mathbf{1}\,013456^2$$
$$\mathbf{12}\,0986544^2 + 2552000^2 = \mathbf{121}\,013456^2$$
$$\mathbf{1232}\,0986544^2 + 25752000^2 = \mathbf{12321}\,013456^2$$
$$\mathbf{123432}\,0986544^2 + 257752000^2 = \mathbf{1234321}\,013456^2 \quad (5.116)$$

$$0986311^2 + 234000^2 = \mathbf{1}\,013689^2$$
$$\mathbf{12}\,0986311^2 + 2574000^2 = \mathbf{121}\,013689^2$$
$$\mathbf{1232}\,0986311^2 + 25974000^2 = \mathbf{12321}\,013689^2$$
$$\mathbf{123432}\,0986311^2 + 259974000^2 = \mathbf{1234321}\,013689^2 \quad (5.117)$$

$$0986076^2 + 236000^2 = \mathbf{1}\,013924^2$$
$$\mathbf{12}\,0986076^2 + 2596000^2 = \mathbf{121}\,013924^2$$
$$\mathbf{1232}\,0986076^2 + 26196000^2 = \mathbf{12321}\,013924^2$$
$$\mathbf{123432}\,0986076^2 + 262196000^2 = \mathbf{1234321}\,013924^2 \quad (5.118)$$

$$0985839^2 + 238000^2 = \mathbf{1}\,014161^2$$
$$\mathbf{12}\,0985839^2 + 2618000^2 = \mathbf{121}\,014161^2$$
$$\mathbf{1232}\,0985839^2 + 26418000^2 = \mathbf{12321}\,014161^2$$
$$\mathbf{123432}\,0985839^2 + 264418000^2 = \mathbf{1234321}\,014161^2 \quad (5.119)$$

$$0985600^2 + 240000^2 = \mathbf{1}\,014400^2$$
$$\mathbf{12}\,0985600^2 + 2640000^2 = \mathbf{121}\,014400^2$$
$$\mathbf{1232}\,0985600^2 + 26640000^2 = \mathbf{12321}\,014400^2$$
$$\mathbf{123432}\,0985600^2 + 266640000^2 = \mathbf{1234321}\,014400^2 \quad (5.120)$$

$$0985359^2 + 242000^2 = \mathbf{1}\,014641^2$$
$$\mathbf{12}\,0985359^2 + 2662000^2 = \mathbf{121}\,014641^2$$
$$\mathbf{1232}\,0985359^2 + 26862000^2 = \mathbf{12321}\,014641^2$$
$$\mathbf{123432}\,0985359^2 + 268862000^2 = \mathbf{1234321}\,014641^2 \quad (5.121)$$

$$0985116^2 + 244000^2 = \mathbf{1}\,014884^2$$
$$\mathbf{12}\,0985116^2 + 2684000^2 = \mathbf{121}\,014884^2$$
$$\mathbf{1232}\,0985116^2 + 27084000^2 = \mathbf{12321}\,014884^2$$
$$\mathbf{123432}\,0985116^2 + 271084000^2 = \mathbf{1234321}\,014884^2 \quad (5.122)$$

$$0984871^2 + 246000^2 = \mathbf{1}\,015129^2$$
$$\mathbf{12}\,0984871^2 + 2706000^2 = \mathbf{121}\,015129^2$$
$$\mathbf{1232}\,0984871^2 + 27306000^2 = \mathbf{12321}\,015129^2$$
$$\mathbf{123432}\,0984871^2 + 273306000^2 = \mathbf{1234321}\,015129^2 \quad (5.123)$$

$$0984624^2 + 248000^2 = \mathbf{1}\,015376^2$$
$$\mathbf{12}\,0984624^2 + 2728000^2 = \mathbf{121}\,015376^2$$
$$\mathbf{1232}\,0984624^2 + 27528000^2 = \mathbf{12321}\,015376^2$$
$$\mathbf{123432}\,0984624^2 + 275528000^2 = \mathbf{1234321}\,015376^2 \quad (5.124)$$

$$0984375^2 + 250000^2 = \mathbf{1}\,015625^2$$
$$\mathbf{12}\,0984375^2 + 2750000^2 = \mathbf{121}\,015625^2$$
$$\mathbf{1232}\,0984375^2 + 27750000^2 = \mathbf{12321}\,015625^2$$
$$\mathbf{123432}\,0984375^2 + 277750000^2 = \mathbf{1234321}\,015625^2 \quad (5.125)$$

$$0984124^2 + 252000^2 = \mathbf{1}\,015876^2$$
$$\mathbf{12}\,0984124^2 + 2772000^2 = \mathbf{121}\,015876^2$$
$$\mathbf{1232}\,0984124^2 + 27972000^2 = \mathbf{12321}\,015876^2$$
$$\mathbf{123432}\,0984124^2 + 279972000^2 = \mathbf{1234321}\,015876^2 \quad (5.126)$$

$$0983871^2 + 254000^2 = \mathbf{1}\,016129^2$$
$$\mathbf{12}\,0983871^2 + 2794000^2 = \mathbf{121}\,016129^2$$
$$\mathbf{1232}\,0983871^2 + 28194000^2 = \mathbf{12321}\,016129^2$$
$$\mathbf{123432}\,0983871^2 + 282194000^2 = \mathbf{1234321}\,016129^2 \quad (5.127)$$

$$0983616^2 + 256000^2 = \mathbf{1}\,016384^2$$
$$\mathbf{12}\,0983616^2 + 2816000^2 = \mathbf{121}\,016384^2$$
$$\mathbf{1232}\,0983616^2 + 28416000^2 = \mathbf{12321}\,016384^2$$
$$\mathbf{123432}\,0983616^2 + 284416000^2 = \mathbf{1234321}\,016384^2 \quad (5.128)$$

$$0983359^2 + 258000^2 = \mathbf{1}\,016641^2$$
$$\mathbf{12}\,0983359^2 + 2838000^2 = \mathbf{121}\,016641^2$$
$$\mathbf{1232}\,0983359^2 + 28638000^2 = \mathbf{12321}\,016641^2$$
$$\mathbf{123432}\,0983359^2 + 286638000^2 = \mathbf{1234321}\,016641^2 \quad (5.129)$$

$$0983100^2 + 260000^2 = \mathbf{1}\,016900^2$$
$$\mathbf{12}\,0983100^2 + 2860000^2 = \mathbf{121}\,016900^2$$
$$\mathbf{1232}\,0983100^2 + 28860000^2 = \mathbf{12321}\,016900^2$$
$$\mathbf{123432}\,0983100^2 + 288860000^2 = \mathbf{1234321}\,016900^2 \quad (5.130)$$

$$0982839^2 + 262000^2 = \mathbf{1}\,017161^2$$
$$\mathbf{12}\,0982839^2 + 2882000^2 = \mathbf{121}\,017161^2$$
$$\mathbf{1232}\,0982839^2 + 29082000^2 = \mathbf{12321}\,017161^2$$
$$\mathbf{123432}\,0982839^2 + 291082000^2 = \mathbf{1234321}\,017161^2 \quad (5.131)$$

$$0982576^2 + 264000^2 = \mathbf{1}\,017424^2$$
$$\mathbf{12}\,0982576^2 + 2904000^2 = \mathbf{121}\,017424^2$$
$$\mathbf{1232}\,0982576^2 + 29304000^2 = \mathbf{12321}\,017424^2$$
$$\mathbf{123432}\,0982576^2 + 293304000^2 = \mathbf{1234321}\,017424^2 \quad (5.132)$$

$$0982311^2 + 266000^2 = \mathbf{1}\,017689^2$$
$$\mathbf{12}\,0982311^2 + 2926000^2 = \mathbf{121}\,017689^2$$
$$\mathbf{1232}\,0982311^2 + 29526000^2 = \mathbf{12321}\,017689^2$$
$$\mathbf{123432}\,0982311^2 + 295526000^2 = \mathbf{1234321}\,017689^2 \quad (5.133)$$

$$0982044^2 + 268000^2 = \mathbf{1}\,017956^2$$
$$\mathbf{12}\,0982044^2 + 2948000^2 = \mathbf{121}\,017956^2$$
$$\mathbf{1232}\,0982044^2 + 29748000^2 = \mathbf{12321}\,017956^2$$
$$\mathbf{123432}\,0982044^2 + 297748000^2 = \mathbf{1234321}\,017956^2 \quad (5.134)$$

$$0981775^2 + 270000^2 = \mathbf{1}\,018225^2$$
$$\mathbf{12}\,0981775^2 + 2970000^2 = \mathbf{121}\,018225^2$$
$$\mathbf{1232}\,0981775^2 + 29970000^2 = \mathbf{12321}\,018225^2$$
$$\mathbf{123432}\,0981775^2 + 299970000^2 = \mathbf{1234321}\,018225^2 \quad (5.135)$$

$$0981504^2 + 272000^2 = \mathbf{1}\,018496^2$$
$$\mathbf{12}\,0981504^2 + 2992000^2 = \mathbf{121}\,018496^2$$
$$\mathbf{1232}\,0981504^2 + 30192000^2 = \mathbf{12321}\,018496^2$$
$$\mathbf{123432}\,0981504^2 + 302192000^2 = \mathbf{1234321}\,018496^2 \quad (5.136)$$

$$0981231^2 + 274000^2 = \mathbf{1}\,018769^2$$
$$\mathbf{12}\,0981231^2 + 3014000^2 = \mathbf{121}\,018769^2$$
$$\mathbf{1232}\,0981231^2 + 30414000^2 = \mathbf{12321}\,018769^2$$
$$\mathbf{123432}\,0981231^2 + 304414000^2 = \mathbf{1234321}\,018769^2 \quad (5.137)$$

$$0980956^2 + 276000^2 = \mathbf{1}\,019044^2$$
$$\mathbf{12}\,0980956^2 + 3036000^2 = \mathbf{121}\,019044^2$$
$$\mathbf{1232}\,0980956^2 + 30636000^2 = \mathbf{12321}\,019044^2$$
$$\mathbf{123432}\,0980956^2 + 306636000^2 = \mathbf{1234321}\,019044^2 \quad (5.138)$$

$$0980679^2 + 278000^2 = \mathbf{1}\,019321^2$$
$$\mathbf{12}\,0980679^2 + 3058000^2 = \mathbf{121}\,019321^2$$
$$\mathbf{1232}\,0980679^2 + 30858000^2 = \mathbf{12321}\,019321^2$$
$$\mathbf{123432}\,0980679^2 + 308858000^2 = \mathbf{1234321}\,019321^2 \quad (5.139)$$

$$0980400^2 + 280000^2 = \mathbf{1}\,019600^2$$
$$\mathbf{12}\,0980400^2 + 3080000^2 = \mathbf{121}\,019600^2$$
$$\mathbf{1232}\,0980400^2 + 31080000^2 = \mathbf{12321}\,019600^2$$
$$\mathbf{123432}\,0980400^2 + 311080000^2 = \mathbf{1234321}\,019600^2 \quad (5.140)$$

$$0980119^2 + 282000^2 = \mathbf{1}\,019881^2$$
$$\mathbf{12}\,0980119^2 + 3102000^2 = \mathbf{121}\,019881^2$$
$$\mathbf{1232}\,0980119^2 + 31302000^2 = \mathbf{12321}\,019881^2$$
$$\mathbf{123432}\,0980119^2 + 313302000^2 = \mathbf{1234321}\,019881^2 \quad (5.141)$$

$$0979836^2 + 284000^2 = \mathbf{1}\,020164^2$$
$$\mathbf{12}\,0979836^2 + 3124000^2 = \mathbf{121}\,020164^2$$
$$\mathbf{1232}\,0979836^2 + 31524000^2 = \mathbf{12321}\,020164^2$$
$$\mathbf{123432}\,0979836^2 + 315524000^2 = \mathbf{1234321}\,020164^2 \quad (5.142)$$

$$0979551^2 + 286000^2 = \mathbf{1}\,020449^2$$
$$\mathbf{12}\,0979551^2 + 3146000^2 = \mathbf{121}\,020449^2$$
$$\mathbf{1232}\,0979551^2 + 31746000^2 = \mathbf{12321}\,020449^2$$
$$\mathbf{123432}\,0979551^2 + 317746000^2 = \mathbf{1234321}\,020449^2 \quad (5.143)$$

$$0979264^2 + 288000^2 = \mathbf{1}\,020736^2$$
$$\mathbf{12}\,0979264^2 + 3168000^2 = \mathbf{121}\,020736^2$$
$$\mathbf{1232}\,0979264^2 + 31968000^2 = \mathbf{12321}\,020736^2$$
$$\mathbf{123432}\,0979264^2 + 319968000^2 = \mathbf{1234321}\,020736^2 \quad (5.144)$$

$$0978975^2 + 290000^2 = \mathbf{1}\,021025^2$$
$$\mathbf{12}\,0978975^2 + 3190000^2 = \mathbf{121}\,021025^2$$
$$\mathbf{1232}\,0978975^2 + 32190000^2 = \mathbf{12321}\,021025^2$$
$$\mathbf{123432}\,0978975^2 + 322190000^2 = \mathbf{1234321}\,021025^2 \quad (5.145)$$

$$0978684^2 + 292000^2 = \mathbf{1}\,021316^2$$
$$\mathbf{12}\,0978684^2 + 3212000^2 = \mathbf{121}\,021316^2$$
$$\mathbf{1232}\,0978684^2 + 32412000^2 = \mathbf{12321}\,021316^2$$
$$\mathbf{123432}\,0978684^2 + 324412000^2 = \mathbf{1234321}\,021316^2 \quad (5.146)$$

$$0978391^2 + 294000^2 = \mathbf{1}\,021609^2$$
$$\mathbf{12}\,0978391^2 + 3234000^2 = \mathbf{121}\,021609^2$$
$$\mathbf{1232}\,0978391^2 + 32634000^2 = \mathbf{12321}\,021609^2$$
$$\mathbf{123432}\,0978391^2 + 326634000^2 = \mathbf{1234321}\,021609^2 \quad (5.147)$$

$$0978096^2 + 296000^2 = \mathbf{1}\,021904^2$$
$$\mathbf{12}\,0978096^2 + 3256000^2 = \mathbf{121}\,021904^2$$
$$\mathbf{1232}\,0978096^2 + 32856000^2 = \mathbf{12321}\,021904^2$$
$$\mathbf{123432}\,0978096^2 + 328856000^2 = \mathbf{1234321}\,021904^2 \quad (5.148)$$

$$0977799^2 + 298000^2 = \mathbf{1}\,022201^2$$
$$\mathbf{12}\,0977799^2 + 3278000^2 = \mathbf{121}\,022201^2$$
$$\mathbf{1232}\,0977799^2 + 33078000^2 = \mathbf{12321}\,022201^2$$
$$\mathbf{123432}\,0977799^2 + 331078000^2 = \mathbf{1234321}\,022201^2 \quad (5.149)$$

$$0977500^2 + 300000^2 = \mathbf{1}\,022500^2$$
$$\mathbf{12}\,0977500^2 + 3300000^2 = \mathbf{121}\,022500^2$$
$$\mathbf{1232}\,0977500^2 + 33300000^2 = \mathbf{12321}\,022500^2$$
$$\mathbf{123432}\,0977500^2 + 333300000^2 = \mathbf{1234321}\,022500^2 \quad (5.150)$$

$$0977199^2 + 302000^2 \quad = \mathbf{1}\,022801^2$$
$$\mathbf{12}\,0977199^2 + 3322000^2 \quad = \mathbf{121}\,022801^2$$
$$\mathbf{1232}\,0977199^2 + 33522000^2 \ = \mathbf{12321}\,022801^2$$
$$\mathbf{123432}\,0977199^2 + 335522000^2 = \mathbf{1234321}\,022801^2 \quad (5.151)$$

$$0976896^2 + 304000^2 \quad = \mathbf{1}\,023104^2$$
$$\mathbf{12}\,0976896^2 + 3344000^2 \quad = \mathbf{121}\,023104^2$$
$$\mathbf{1232}\,0976896^2 + 33744000^2 \ = \mathbf{12321}\,023104^2$$
$$\mathbf{123432}\,0976896^2 + 337744000^2 = \mathbf{1234321}\,023104^2 \quad (5.152)$$

$$0976591^2 + 306000^2 \quad = \mathbf{1}\,023409^2$$
$$\mathbf{12}\,0976591^2 + 3366000^2 \quad = \mathbf{121}\,023409^2$$
$$\mathbf{1232}\,0976591^2 + 33966000^2 \ = \mathbf{12321}\,023409^2$$
$$\mathbf{123432}\,0976591^2 + 339966000^2 = \mathbf{1234321}\,023409^2 \quad (5.153)$$

$$0976284^2 + 308000^2 \quad = \mathbf{1}\,023716^2$$
$$\mathbf{12}\,0976284^2 + 3388000^2 \quad = \mathbf{121}\,023716^2$$
$$\mathbf{1232}\,0976284^2 + 34188000^2 \ = \mathbf{12321}\,023716^2$$
$$\mathbf{123432}\,0976284^2 + 342188000^2 = \mathbf{1234321}\,023716^2 \quad (5.154)$$

$$0975975^2 + 310000^2 \quad = \mathbf{1}\,024025^2$$
$$\mathbf{12}\,0975975^2 + 3410000^2 \quad = \mathbf{121}\,024025^2$$
$$\mathbf{1232}\,0975975^2 + 34410000^2 \ = \mathbf{12321}\,024025^2$$
$$\mathbf{123432}\,0975975^2 + 344410000^2 = \mathbf{1234321}\,024025^2 \quad (5.155)$$

$$0975664^2 + 312000^2 \quad = \mathbf{1}\,024336^2$$
$$\mathbf{12}\,0975664^2 + 3432000^2 \quad = \mathbf{121}\,024336^2$$
$$\mathbf{1232}\,0975664^2 + 34632000^2 \ = \mathbf{12321}\,024336^2$$
$$\mathbf{123432}\,0975664^2 + 346632000^2 = \mathbf{1234321}\,024336^2 \quad (5.156)$$

$$0975351^2 + 314000^2 \quad = \mathbf{1}\,024649^2$$
$$\mathbf{12}\,0975351^2 + 3454000^2 \quad = \mathbf{121}\,024649^2$$
$$\mathbf{1232}\,0975351^2 + 34854000^2 \ = \mathbf{12321}\,024649^2$$
$$\mathbf{123432}\,0975351^2 + 348854000^2 = \mathbf{1234321}\,024649^2 \quad (5.157)$$

$$0975036^2 + 316000^2 \quad = \mathbf{1}\,024964^2$$
$$\mathbf{12}\,0975036^2 + 3476000^2 \quad = \mathbf{121}\,024964^2$$
$$\mathbf{1232}\,0975036^2 + 35076000^2 \ = \mathbf{12321}\,024964^2$$
$$\mathbf{123432}\,0975036^2 + 351076000^2 = \mathbf{1234321}\,024964^2 \quad (5.158)$$

$$0974719^2 + 318000^2 \quad = \mathbf{1}\,025281^2$$
$$\mathbf{12}\,0974719^2 + 3498000^2 \quad = \mathbf{121}\,025281^2$$
$$\mathbf{1232}\,0974719^2 + 35298000^2 \ = \mathbf{12321}\,025281^2$$
$$\mathbf{123432}\,0974719^2 + 353298000^2 = \mathbf{1234321}\,025281^2 \quad (5.159)$$

$$0974400^2 + 320000^2 \quad = \mathbf{1}\,025600^2$$
$$\mathbf{12}\,0974400^2 + 3520000^2 \quad = \mathbf{121}\,025600^2$$
$$\mathbf{1232}\,0974400^2 + 35520000^2 \ = \mathbf{12321}\,025600^2$$
$$\mathbf{123432}\,0974400^2 + 355520000^2 = \mathbf{1234321}\,025600^2 \quad (5.160)$$

$$0974079^2 + 322000^2 \quad = \mathbf{1}\,025921^2$$
$$\mathbf{12}\,0974079^2 + 3542000^2 \quad = \mathbf{121}\,025921^2$$
$$\mathbf{1232}\,0974079^2 + 35742000^2 \ = \mathbf{12321}\,025921^2$$
$$\mathbf{123432}\,0974079^2 + 357742000^2 = \mathbf{1234321}\,025921^2 \quad (5.161)$$

$$0973756^2 + 324000^2 \quad = \mathbf{1}\,026244^2$$
$$\mathbf{12}\,0973756^2 + 3564000^2 \quad = \mathbf{121}\,026244^2$$
$$\mathbf{1232}\,0973756^2 + 35964000^2 \ = \mathbf{12321}\,026244^2$$
$$\mathbf{123432}\,0973756^2 + 359964000^2 = \mathbf{1234321}\,026244^2 \quad (5.162)$$

$$0973431^2 + 326000^2 \quad = \mathbf{1}\,026569^2$$
$$\mathbf{12}\,0973431^2 + 3586000^2 \quad = \mathbf{121}\,026569^2$$
$$\mathbf{1232}\,0973431^2 + 36186000^2 \ = \mathbf{12321}\,026569^2$$
$$\mathbf{123432}\,0973431^2 + 362186000^2 = \mathbf{1234321}\,026569^2 \quad (5.163)$$

$$0973104^2 + 328000^2 \quad = \mathbf{1}\,026896^2$$
$$\mathbf{12}\,0973104^2 + 3608000^2 \quad = \mathbf{121}\,026896^2$$
$$\mathbf{1232}\,0973104^2 + 36408000^2 \ = \mathbf{12321}\,026896^2$$
$$\mathbf{123432}\,0973104^2 + 364408000^2 = \mathbf{1234321}\,026896^2 \quad (5.164)$$

$$0972775^2 + 330000^2 \quad = \mathbf{1}\,027225^2$$
$$\mathbf{12}\,0972775^2 + 3630000^2 \quad = \mathbf{121}\,027225^2$$
$$\mathbf{1232}\,0972775^2 + 36630000^2 \ = \mathbf{12321}\,027225^2$$
$$\mathbf{123432}\,0972775^2 + 366630000^2 = \mathbf{1234321}\,027225^2 \quad (5.165)$$

$$0972444^2 + 332000^2 \quad = \mathbf{1}\,027556^2$$
$$\mathbf{12}\,0972444^2 + 3652000^2 \quad = \mathbf{121}\,027556^2$$
$$\mathbf{1232}\,0972444^2 + 36852000^2 \ = \mathbf{12321}\,027556^2$$
$$\mathbf{123432}\,0972444^2 + 368852000^2 = \mathbf{1234321}\,027556^2 \quad (5.166)$$

$$0972111^2 + 334000^2 \quad = \mathbf{1}\,027889^2$$
$$\mathbf{12}\,0972111^2 + 3674000^2 \quad = \mathbf{121}\,027889^2$$
$$\mathbf{1232}\,0972111^2 + 37074000^2 \ = \mathbf{12321}\,027889^2$$
$$\mathbf{123432}\,0972111^2 + 371074000^2 = \mathbf{1234321}\,027889^2 \quad (5.167)$$

$$0971776^2 + 336000^2 = \mathbf{1}\,028224^2$$
$$\mathbf{12}\,0971776^2 + 3696000^2 = \mathbf{121}\,028224^2$$
$$\mathbf{1232}\,0971776^2 + 37296000^2 = \mathbf{12321}\,028224^2$$
$$\mathbf{123432}\,0971776^2 + 373296000^2 = \mathbf{1234321}\,028224^2 \quad (5.168)$$

$$0971439^2 + 338000^2 = \mathbf{1}\,028561^2$$
$$\mathbf{12}\,0971439^2 + 3718000^2 = \mathbf{121}\,028561^2$$
$$\mathbf{1232}\,0971439^2 + 37518000^2 = \mathbf{12321}\,028561^2$$
$$\mathbf{123432}\,0971439^2 + 375518000^2 = \mathbf{1234321}\,028561^2 \quad (5.169)$$

$$0971100^2 + 340000^2 = \mathbf{1}\,028900^2$$
$$\mathbf{12}\,0971100^2 + 3740000^2 = \mathbf{121}\,028900^2$$
$$\mathbf{1232}\,0971100^2 + 37740000^2 = \mathbf{12321}\,028900^2$$
$$\mathbf{123432}\,0971100^2 + 377740000^2 = \mathbf{1234321}\,028900^2 \quad (5.170)$$

$$0970759^2 + 342000^2 = \mathbf{1}\,029241^2$$
$$\mathbf{12}\,0970759^2 + 3762000^2 = \mathbf{121}\,029241^2$$
$$\mathbf{1232}\,0970759^2 + 37962000^2 = \mathbf{12321}\,029241^2$$
$$\mathbf{123432}\,0970759^2 + 379962000^2 = \mathbf{1234321}\,029241^2 \quad (5.171)$$

$$0970416^2 + 344000^2 = \mathbf{1}\,029584^2$$
$$\mathbf{12}\,0970416^2 + 3784000^2 = \mathbf{121}\,029584^2$$
$$\mathbf{1232}\,0970416^2 + 38184000^2 = \mathbf{12321}\,029584^2$$
$$\mathbf{123432}\,0970416^2 + 382184000^2 = \mathbf{1234321}\,029584^2 \quad (5.172)$$

$$0970071^2 + 346000^2 = \mathbf{1}\,029929^2$$
$$\mathbf{12}\,0970071^2 + 3806000^2 = \mathbf{121}\,029929^2$$
$$\mathbf{1232}\,0970071^2 + 38406000^2 = \mathbf{12321}\,029929^2$$
$$\mathbf{123432}\,0970071^2 + 384406000^2 = \mathbf{1234321}\,029929^2 \quad (5.173)$$

$$0969724^2 + 348000^2 = \mathbf{1}\,030276^2$$
$$\mathbf{12}\,0969724^2 + 3828000^2 = \mathbf{121}\,030276^2$$
$$\mathbf{1232}\,0969724^2 + 38628000^2 = \mathbf{12321}\,030276^2$$
$$\mathbf{123432}\,0969724^2 + 386628000^2 = \mathbf{1234321}\,030276^2 \quad (5.174)$$

$$0969375^2 + 350000^2 = \mathbf{1}\,030625^2$$
$$\mathbf{12}\,0969375^2 + 3850000^2 = \mathbf{121}\,030625^2$$
$$\mathbf{1232}\,0969375^2 + 38850000^2 = \mathbf{12321}\,030625^2$$
$$\mathbf{123432}\,0969375^2 + 388850000^2 = \mathbf{1234321}\,030625^2 \quad (5.175)$$

$$0969024^2 + 352000^2 = \mathbf{1}\,030976^2$$
$$\mathbf{12}\,0969024^2 + 3872000^2 = \mathbf{121}\,030976^2$$
$$\mathbf{1232}\,0969024^2 + 39072000^2 = \mathbf{12321}\,030976^2$$
$$\mathbf{123432}\,0969024^2 + 391072000^2 = \mathbf{1234321}\,030976^2 \quad (5.176)$$

$$0968671^2 + 354000^2 = \mathbf{1}\,031329^2$$
$$\mathbf{12}\,0968671^2 + 3894000^2 = \mathbf{121}\,031329^2$$
$$\mathbf{1232}\,0968671^2 + 39294000^2 = \mathbf{12321}\,031329^2$$
$$\mathbf{123432}\,0968671^2 + 393294000^2 = \mathbf{1234321}\,031329^2 \quad (5.177)$$

$$0968316^2 + 356000^2 = \mathbf{1}\,031684^2$$
$$\mathbf{12}\,0968316^2 + 3916000^2 = \mathbf{121}\,031684^2$$
$$\mathbf{1232}\,0968316^2 + 39516000^2 = \mathbf{12321}\,031684^2$$
$$\mathbf{123432}\,0968316^2 + 395516000^2 = \mathbf{1234321}\,031684^2 \quad (5.178)$$

$$0967959^2 + 358000^2 = \mathbf{1}\,032041^2$$
$$\mathbf{12}\,0967959^2 + 3938000^2 = \mathbf{121}\,032041^2$$
$$\mathbf{1232}\,0967959^2 + 39738000^2 = \mathbf{12321}\,032041^2$$
$$\mathbf{123432}\,0967959^2 + 397738000^2 = \mathbf{1234321}\,032041^2 \quad (5.179)$$

$$0967600^2 + 360000^2 = \mathbf{1}\,032400^2$$
$$\mathbf{12}\,0967600^2 + 3960000^2 = \mathbf{121}\,032400^2$$
$$\mathbf{1232}\,0967600^2 + 39960000^2 = \mathbf{12321}\,032400^2$$
$$\mathbf{123432}\,0967600^2 + 399960000^2 = \mathbf{1234321}\,032400^2 \quad (5.180)$$

$$0967239^2 + 362000^2 = \mathbf{1}\,032761^2$$
$$\mathbf{12}\,0967239^2 + 3982000^2 = \mathbf{121}\,032761^2$$
$$\mathbf{1232}\,0967239^2 + 40182000^2 = \mathbf{12321}\,032761^2$$
$$\mathbf{123432}\,0967239^2 + 402182000^2 = \mathbf{1234321}\,032761^2 \quad (5.181)$$

$$0966876^2 + 364000^2 = \mathbf{1}\,033124^2$$
$$\mathbf{12}\,0966876^2 + 4004000^2 = \mathbf{121}\,033124^2$$
$$\mathbf{1232}\,0966876^2 + 40404000^2 = \mathbf{12321}\,033124^2$$
$$\mathbf{123432}\,0966876^2 + 404404000^2 = \mathbf{1234321}\,033124^2 \quad (5.182)$$

$$0966511^2 + 366000^2 = \mathbf{1}\,033489^2$$
$$\mathbf{12}\,0966511^2 + 4026000^2 = \mathbf{121}\,033489^2$$
$$\mathbf{1232}\,0966511^2 + 40626000^2 = \mathbf{12321}\,033489^2$$
$$\mathbf{123432}\,0966511^2 + 406626000^2 = \mathbf{1234321}\,033489^2 \quad (5.183)$$

$$0966144^2 + 368000^2 = \mathbf{1}\,033856^2$$
$$\mathbf{12}\,0966144^2 + 4048000^2 = \mathbf{121}\,033856^2$$
$$\mathbf{1232}\,0966144^2 + 40848000^2 = \mathbf{12321}\,033856^2$$
$$\mathbf{123432}\,0966144^2 + 408848000^2 = \mathbf{1234321}\,033856^2 \quad (5.184)$$

$0965775^2 + 370000^2 \quad = \mathbf{1}\,034225^2$

$\mathbf{12}\,0965775^2 + 4070000^2 \quad = \mathbf{121}\,034225^2$

$\mathbf{1232}\,0965775^2 + 41070000^2 \quad = \mathbf{12321}\,034225^2$

$\mathbf{123432}\,0965775^2 + 411070000^2 = \mathbf{1234321}\,034225^2 \quad (5.185)$

$0965404^2 + 372000^2 \quad = \mathbf{1}\,034596^2$

$\mathbf{12}\,0965404^2 + 4092000^2 \quad = \mathbf{121}\,034596^2$

$\mathbf{1232}\,0965404^2 + 41292000^2 \quad = \mathbf{12321}\,034596^2$

$\mathbf{123432}\,0965404^2 + 413292000^2 = \mathbf{1234321}\,034596^2 \quad (5.186)$

$0965031^2 + 374000^2 \quad = \mathbf{1}\,034969^2$

$\mathbf{12}\,0965031^2 + 4114000^2 \quad = \mathbf{121}\,034969^2$

$\mathbf{1232}\,0965031^2 + 41514000^2 \quad = \mathbf{12321}\,034969^2$

$\mathbf{123432}\,0965031^2 + 415514000^2 = \mathbf{1234321}\,034969^2 \quad (5.187)$

$0964656^2 + 376000^2 \quad = \mathbf{1}\,035344^2$

$\mathbf{12}\,0964656^2 + 4136000^2 \quad = \mathbf{121}\,035344^2$

$\mathbf{1232}\,0964656^2 + 41736000^2 \quad = \mathbf{12321}\,035344^2$

$\mathbf{123432}\,0964656^2 + 417736000^2 = \mathbf{1234321}\,035344^2 \quad (5.188)$

$0964279^2 + 378000^2 \quad = \mathbf{1}\,035721^2$

$\mathbf{12}\,0964279^2 + 4158000^2 \quad = \mathbf{121}\,035721^2$

$\mathbf{1232}\,0964279^2 + 41958000^2 \quad = \mathbf{12321}\,035721^2$

$\mathbf{123432}\,0964279^2 + 419958000^2 = \mathbf{1234321}\,035721^2 \quad (5.189)$

$0963900^2 + 380000^2 \quad = \mathbf{1}\,036100^2$

$\mathbf{12}\,0963900^2 + 4180000^2 \quad = \mathbf{121}\,036100^2$

$\mathbf{1232}\,0963900^2 + 42180000^2 \quad = \mathbf{12321}\,036100^2$

$\mathbf{123432}\,0963900^2 + 422180000^2 = \mathbf{1234321}\,036100^2 \quad (5.190)$

$0963519^2 + 382000^2 \quad = \mathbf{1}\,036481^2$

$\mathbf{12}\,0963519^2 + 4202000^2 \quad = \mathbf{121}\,036481^2$

$\mathbf{1232}\,0963519^2 + 42402000^2 \quad = \mathbf{12321}\,036481^2$

$\mathbf{123432}\,0963519^2 + 424402000^2 = \mathbf{1234321}\,036481^2 \quad (5.191)$

$0963136^2 + 384000^2 \quad = \mathbf{1}\,036864^2$

$\mathbf{12}\,0963136^2 + 4224000^2 \quad = \mathbf{121}\,036864^2$

$\mathbf{1232}\,0963136^2 + 42624000^2 \quad = \mathbf{12321}\,036864^2$

$\mathbf{123432}\,0963136^2 + 426624000^2 = \mathbf{1234321}\,036864^2 \quad (5.192)$

$0962751^2 + 386000^2 \quad = \mathbf{1}\,037249^2$

$\mathbf{12}\,0962751^2 + 4246000^2 \quad = \mathbf{121}\,037249^2$

$\mathbf{1232}\,0962751^2 + 42846000^2 \quad = \mathbf{12321}\,037249^2$

$\mathbf{123432}\,0962751^2 + 428846000^2 = \mathbf{1234321}\,037249^2 \quad (5.193)$

$0962364^2 + 388000^2 \quad = \mathbf{1}\,037636^2$

$\mathbf{12}\,0962364^2 + 4268000^2 \quad = \mathbf{121}\,037636^2$

$\mathbf{1232}\,0962364^2 + 43068000^2 \quad = \mathbf{12321}\,037636^2$

$\mathbf{123432}\,0962364^2 + 431068000^2 = \mathbf{1234321}\,037636^2 \quad (5.194)$

$0961975^2 + 390000^2 \quad = \mathbf{1}\,038025^2$

$\mathbf{12}\,0961975^2 + 4290000^2 \quad = \mathbf{121}\,038025^2$

$\mathbf{1232}\,0961975^2 + 43290000^2 \quad = \mathbf{12321}\,038025^2$

$\mathbf{123432}\,0961975^2 + 433290000^2 = \mathbf{1234321}\,038025^2 \quad (5.195)$

$0961584^2 + 392000^2 \quad = \mathbf{1}\,038416^2$

$\mathbf{12}\,0961584^2 + 4312000^2 \quad = \mathbf{121}\,038416^2$

$\mathbf{1232}\,0961584^2 + 43512000^2 \quad = \mathbf{12321}\,038416^2$

$\mathbf{123432}\,0961584^2 + 435512000^2 = \mathbf{1234321}\,038416^2 \quad (5.196)$

$0961191^2 + 394000^2 \quad = \mathbf{1}\,038809^2$

$\mathbf{12}\,0961191^2 + 4334000^2 \quad = \mathbf{121}\,038809^2$

$\mathbf{1232}\,0961191^2 + 43734000^2 \quad = \mathbf{12321}\,038809^2$

$\mathbf{123432}\,0961191^2 + 437734000^2 = \mathbf{1234321}\,038809^2 \quad (5.197)$

$0960796^2 + 396000^2 \quad = \mathbf{1}\,039204^2$

$\mathbf{12}\,0960796^2 + 4356000^2 \quad = \mathbf{121}\,039204^2$

$\mathbf{1232}\,0960796^2 + 43956000^2 \quad = \mathbf{12321}\,039204^2$

$\mathbf{123432}\,0960796^2 + 439956000^2 = \mathbf{1234321}\,039204^2 \quad (5.198)$

$0960399^2 + 398000^2 \quad = \mathbf{1}\,039601^2$

$\mathbf{12}\,0960399^2 + 4378000^2 \quad = \mathbf{121}\,039601^2$

$\mathbf{1232}\,0960399^2 + 44178000^2 \quad = \mathbf{12321}\,039601^2$

$\mathbf{123432}\,0960399^2 + 442178000^2 = \mathbf{1234321}\,039601^2 \quad (5.199)$

5.3   For $n = 200, \ 201, \ 201, \ ..., 297, \ 298, \ 299$:

Let's consider

$m = 1000, \ 11000, \ 111000, \ 1111000, \ 11111000, \ 111111000, \ 1111111000, \ 11111111000, \ 111111111000$

in (1.1), then for each value of $n = 200,\ 201,\ 201,\ ...,297,\ 298,\ 299$; there are 100 *palindromic-type pandigital Pythagorean patterns* given below. In each case, only first four values are written. The other 5 values can be written on similar lines as done in subsection 5.1.1.

$$0960000^2 + 400000^2 = \mathbf{1}\,040000^2$$
$$\mathbf{12}\,0960000^2 + 4400000^2 = \mathbf{121}\,040000^2$$
$$\mathbf{1232}\,0960000^2 + 44400000^2 = \mathbf{12321}\,040000^2$$
$$\mathbf{123432}\,0960000^2 + 444400000^2 = \mathbf{1234321}\,040000^2 \quad (5.200)$$

$$0959599^2 + 402000^2 = \mathbf{1}\,040401^2$$
$$\mathbf{12}\,0959599^2 + 4422000^2 = \mathbf{121}\,040401^2$$
$$\mathbf{1232}\,0959599^2 + 44622000^2 = \mathbf{12321}\,040401^2$$
$$\mathbf{123432}\,0959599^2 + 446622000^2 = \mathbf{1234321}\,040401^2 \quad (5.201)$$

$$0959196^2 + 404000^2 = \mathbf{1}\,040804^2$$
$$\mathbf{12}\,0959196^2 + 4444000^2 = \mathbf{121}\,040804^2$$
$$\mathbf{1232}\,0959196^2 + 44844000^2 = \mathbf{12321}\,040804^2$$
$$\mathbf{123432}\,0959196^2 + 448844000^2 = \mathbf{1234321}\,040804^2 \quad (5.202)$$

$$0958791^2 + 406000^2 = \mathbf{1}\,041209^2$$
$$\mathbf{12}\,0958791^2 + 4466000^2 = \mathbf{121}\,041209^2$$
$$\mathbf{1232}\,0958791^2 + 45066000^2 = \mathbf{12321}\,041209^2$$
$$\mathbf{123432}\,0958791^2 + 451066000^2 = \mathbf{1234321}\,041209^2 \quad (5.203)$$

$$0958384^2 + 408000^2 = \mathbf{1}\,041616^2$$
$$\mathbf{12}\,0958384^2 + 4488000^2 = \mathbf{121}\,041616^2$$
$$\mathbf{1232}\,0958384^2 + 45288000^2 = \mathbf{12321}\,041616^2$$
$$\mathbf{123432}\,0958384^2 + 453288000^2 = \mathbf{1234321}\,041616^2 \quad (5.204)$$

$$0957975^2 + 410000^2 = \mathbf{1}\,042025^2$$
$$\mathbf{12}\,0957975^2 + 4510000^2 = \mathbf{121}\,042025^2$$
$$\mathbf{1232}\,0957975^2 + 45510000^2 = \mathbf{12321}\,042025^2$$
$$\mathbf{123432}\,0957975^2 + 455510000^2 = \mathbf{1234321}\,042025^2 \quad (5.205)$$

$$0957564^2 + 412000^2 = \mathbf{1}\,042436^2$$
$$\mathbf{12}\,0957564^2 + 4532000^2 = \mathbf{121}\,042436^2$$
$$\mathbf{1232}\,0957564^2 + 45732000^2 = \mathbf{12321}\,042436^2$$
$$\mathbf{123432}\,0957564^2 + 457732000^2 = \mathbf{1234321}\,042436^2 \quad (5.206)$$

$$0957151^2 + 414000^2 = \mathbf{1}\,042849^2$$
$$\mathbf{12}\,0957151^2 + 4554000^2 = \mathbf{121}\,042849^2$$
$$\mathbf{1232}\,0957151^2 + 45954000^2 = \mathbf{12321}\,042849^2$$
$$\mathbf{123432}\,0957151^2 + 459954000^2 = \mathbf{1234321}\,042849^2 \quad (5.207)$$

$$0956736^2 + 416000^2 = \mathbf{1}\,043264^2$$
$$\mathbf{12}\,0956736^2 + 4576000^2 = \mathbf{121}\,043264^2$$
$$\mathbf{1232}\,0956736^2 + 46176000^2 = \mathbf{12321}\,043264^2$$
$$\mathbf{123432}\,0956736^2 + 462176000^2 = \mathbf{1234321}\,043264^2 \quad (5.208)$$

$$0956319^2 + 418000^2 = \mathbf{1}\,043681^2$$
$$\mathbf{12}\,0956319^2 + 4598000^2 = \mathbf{121}\,043681^2$$
$$\mathbf{1232}\,0956319^2 + 46398000^2 = \mathbf{12321}\,043681^2$$
$$\mathbf{123432}\,0956319^2 + 464398000^2 = \mathbf{1234321}\,043681^2 \quad (5.209)$$

$$0955900^2 + 420000^2 = \mathbf{1}\,044100^2$$
$$\mathbf{12}\,0955900^2 + 4620000^2 = \mathbf{121}\,044100^2$$
$$\mathbf{1232}\,0955900^2 + 46620000^2 = \mathbf{12321}\,044100^2$$
$$\mathbf{123432}\,0955900^2 + 466620000^2 = \mathbf{1234321}\,044100^2 \quad (5.210)$$

$$0955479^2 + 422000^2 = \mathbf{1}\,044521^2$$
$$\mathbf{12}\,0955479^2 + 4642000^2 = \mathbf{121}\,044521^2$$
$$\mathbf{1232}\,0955479^2 + 46842000^2 = \mathbf{12321}\,044521^2$$
$$\mathbf{123432}\,0955479^2 + 468842000^2 = \mathbf{1234321}\,044521^2 \quad (5.211)$$

$$0955056^2 + 424000^2 = \mathbf{1}\,044944^2$$
$$\mathbf{12}\,0955056^2 + 4664000^2 = \mathbf{121}\,044944^2$$
$$\mathbf{1232}\,0955056^2 + 47064000^2 = \mathbf{12321}\,044944^2$$
$$\mathbf{123432}\,0955056^2 + 471064000^2 = \mathbf{1234321}\,044944^2 \quad (5.212)$$

$$0954631^2 + 426000^2 = \mathbf{1}\,045369^2$$
$$\mathbf{12}\,0954631^2 + 4686000^2 = \mathbf{121}\,045369^2$$
$$\mathbf{1232}\,0954631^2 + 47286000^2 = \mathbf{12321}\,045369^2$$
$$\mathbf{123432}\,0954631^2 + 473286000^2 = \mathbf{1234321}\,045369^2 \quad (5.213)$$

$$0954204^2 + 428000^2 = \mathbf{1}\,045796^2$$
$$\mathbf{12}\,0954204^2 + 4708000^2 = \mathbf{121}\,045796^2$$
$$\mathbf{1232}\,0954204^2 + 47508000^2 = \mathbf{12321}\,045796^2$$
$$\mathbf{123432}\,0954204^2 + 475508000^2 = \mathbf{1234321}\,045796^2 \quad (5.214)$$

$$0953775^2 + 430000^2 = \mathbf{1}\,046225^2$$
$$\mathbf{12}\,0953775^2 + 4730000^2 = \mathbf{121}\,046225^2$$
$$\mathbf{1232}\,0953775^2 + 47730000^2 = \mathbf{12321}\,046225^2$$
$$\mathbf{123432}\,0953775^2 + 477730000^2 = \mathbf{1234321}\,046225^2 \quad (5.215)$$

$$0953344^2 + 432000^2 = \mathbf{1}\,046656^2$$
$$\mathbf{12}\,0953344^2 + 4752000^2 = \mathbf{121}\,046656^2$$
$$\mathbf{1232}\,0953344^2 + 47952000^2 = \mathbf{12321}\,046656^2$$
$$\mathbf{123432}\,0953344^2 + 479952000^2 = \mathbf{1234321}\,046656^2 \quad (5.216)$$

$$0952911^2 + 434000^2 = \mathbf{1}\,047089^2$$
$$\mathbf{12}\,0952911^2 + 4774000^2 = \mathbf{121}\,047089^2$$
$$\mathbf{1232}\,0952911^2 + 48174000^2 = \mathbf{12321}\,047089^2$$
$$\mathbf{123432}\,0952911^2 + 482174000^2 = \mathbf{1234321}\,047089^2 \quad (5.217)$$

$$0952476^2 + 436000^2 = \mathbf{1}\,047524^2$$
$$\mathbf{12}\,0952476^2 + 4796000^2 = \mathbf{121}\,047524^2$$
$$\mathbf{1232}\,0952476^2 + 48396000^2 = \mathbf{12321}\,047524^2$$
$$\mathbf{123432}\,0952476^2 + 484396000^2 = \mathbf{1234321}\,047524^2 \quad (5.218)$$

$$0952039^2 + 438000^2 = \mathbf{1}\,047961^2$$
$$\mathbf{12}\,0952039^2 + 4818000^2 = \mathbf{121}\,047961^2$$
$$\mathbf{1232}\,0952039^2 + 48618000^2 = \mathbf{12321}\,047961^2$$
$$\mathbf{123432}\,0952039^2 + 486618000^2 = \mathbf{1234321}\,047961^2 \quad (5.219)$$

$$0951600^2 + 440000^2 = \mathbf{1}\,048400^2$$
$$\mathbf{12}\,0951600^2 + 4840000^2 = \mathbf{121}\,048400^2$$
$$\mathbf{1232}\,0951600^2 + 48840000^2 = \mathbf{12321}\,048400^2$$
$$\mathbf{123432}\,0951600^2 + 488840000^2 = \mathbf{1234321}\,048400^2 \quad (5.220)$$

$$0951159^2 + 442000^2 = \mathbf{1}\,048841^2$$
$$\mathbf{12}\,0951159^2 + 4862000^2 = \mathbf{121}\,048841^2$$
$$\mathbf{1232}\,0951159^2 + 49062000^2 = \mathbf{12321}\,048841^2$$
$$\mathbf{123432}\,0951159^2 + 491062000^2 = \mathbf{1234321}\,048841^2 \quad (5.221)$$

$$0950716^2 + 444000^2 = \mathbf{1}\,049284^2$$
$$\mathbf{12}\,0950716^2 + 4884000^2 = \mathbf{121}\,049284^2$$
$$\mathbf{1232}\,0950716^2 + 49284000^2 = \mathbf{12321}\,049284^2$$
$$\mathbf{123432}\,0950716^2 + 493284000^2 = \mathbf{1234321}\,049284^2 \quad (5.222)$$

$$0950271^2 + 446000^2 = \mathbf{1}\,049729^2$$
$$\mathbf{12}\,0950271^2 + 4906000^2 = \mathbf{121}\,049729^2$$
$$\mathbf{1232}\,0950271^2 + 49506000^2 = \mathbf{12321}\,049729^2$$
$$\mathbf{123432}\,0950271^2 + 495506000^2 = \mathbf{1234321}\,049729^2 \quad (5.223)$$

$$0949824^2 + 448000^2 = \mathbf{1}\,050176^2$$
$$\mathbf{12}\,0949824^2 + 4928000^2 = \mathbf{121}\,050176^2$$
$$\mathbf{1232}\,0949824^2 + 49728000^2 = \mathbf{12321}\,050176^2$$
$$\mathbf{123432}\,0949824^2 + 497728000^2 = \mathbf{1234321}\,050176^2 \quad (5.224)$$

$$0949375^2 + 450000^2 = \mathbf{1}\,050625^2$$
$$\mathbf{12}\,0949375^2 + 4950000^2 = \mathbf{121}\,050625^2$$
$$\mathbf{1232}\,0949375^2 + 49950000^2 = \mathbf{12321}\,050625^2$$
$$\mathbf{123432}\,0949375^2 + 499950000^2 = \mathbf{1234321}\,050625^2 \quad (5.225)$$

$$0948924^2 + 452000^2 = \mathbf{1}\,051076^2$$
$$\mathbf{12}\,0948924^2 + 4972000^2 = \mathbf{121}\,051076^2$$
$$\mathbf{1232}\,0948924^2 + 50172000^2 = \mathbf{12321}\,051076^2$$
$$\mathbf{123432}\,0948924^2 + 502172000^2 = \mathbf{1234321}\,051076^2 \quad (5.226)$$

$$0948471^2 + 454000^2 = \mathbf{1}\,051529^2$$
$$\mathbf{12}\,0948471^2 + 4994000^2 = \mathbf{121}\,051529^2$$
$$\mathbf{1232}\,0948471^2 + 50394000^2 = \mathbf{12321}\,051529^2$$
$$\mathbf{123432}\,0948471^2 + 504394000^2 = \mathbf{1234321}\,051529^2 \quad (5.227)$$

$$0948016^2 + 456000^2 = \mathbf{1}\,051984^2$$
$$\mathbf{12}\,0948016^2 + 5016000^2 = \mathbf{121}\,051984^2$$
$$\mathbf{1232}\,0948016^2 + 50616000^2 = \mathbf{12321}\,051984^2$$
$$\mathbf{123432}\,0948016^2 + 506616000^2 = \mathbf{1234321}\,051984^2 \quad (5.228)$$

$$0947559^2 + 458000^2 = \mathbf{1}\,052441^2$$
$$\mathbf{12}\,0947559^2 + 5038000^2 = \mathbf{121}\,052441^2$$
$$\mathbf{1232}\,0947559^2 + 50838000^2 = \mathbf{12321}\,052441^2$$
$$\mathbf{123432}\,0947559^2 + 508838000^2 = \mathbf{1234321}\,052441^2 \quad (5.229)$$

$$0947100^2 + 460000^2 = \mathbf{1}\,052900^2$$
$$\mathbf{12}\,0947100^2 + 5060000^2 = \mathbf{121}\,052900^2$$
$$\mathbf{1232}\,0947100^2 + 51060000^2 = \mathbf{12321}\,052900^2$$
$$\mathbf{123432}\,0947100^2 + 511060000^2 = \mathbf{1234321}\,052900^2 \quad (5.230)$$

$$0946639^2 + 462000^2 = \mathbf{1}\,053361^2$$
$$\mathbf{12}\,0946639^2 + 5082000^2 = \mathbf{121}\,053361^2$$
$$\mathbf{1232}\,0946639^2 + 51282000^2 = \mathbf{12321}\,053361^2$$
$$\mathbf{123432}\,0946639^2 + 513282000^2 = \mathbf{1234321}\,053361^2 \quad (5.231)$$

$$0946176^2 + 464000^2 = \mathbf{1}\,053824^2$$
$$\mathbf{12}\,0946176^2 + 5104000^2 = \mathbf{121}\,053824^2$$
$$\mathbf{1232}\,0946176^2 + 51504000^2 = \mathbf{12321}\,053824^2$$
$$\mathbf{123432}\,0946176^2 + 515504000^2 = \mathbf{1234321}\,053824^2 \quad (5.232)$$

$$0945711^2 + 466000^2 = \mathbf{1}\,054289^2$$
$$\mathbf{12}\,0945711^2 + 5126000^2 = \mathbf{121}\,054289^2$$
$$\mathbf{1232}\,0945711^2 + 51726000^2 = \mathbf{12321}\,054289^2$$
$$\mathbf{123432}\,0945711^2 + 517726000^2 = \mathbf{1234321}\,054289^2 \quad (5.233)$$

$$0945244^2 + 468000^2 = \mathbf{1}\,054756^2$$
$$\mathbf{12}\,0945244^2 + 5148000^2 = \mathbf{121}\,054756^2$$
$$\mathbf{1232}\,0945244^2 + 51948000^2 = \mathbf{12321}\,054756^2$$
$$\mathbf{123432}\,0945244^2 + 519948000^2 = \mathbf{1234321}\,054756^2 \quad (5.234)$$

$$0944775^2 + 470000^2 = \mathbf{1}\,055225^2$$
$$\mathbf{12}\,0944775^2 + 5170000^2 = \mathbf{121}\,055225^2$$
$$\mathbf{1232}\,0944775^2 + 52170000^2 = \mathbf{12321}\,055225^2$$
$$\mathbf{123432}\,0944775^2 + 522170000^2 = \mathbf{1234321}\,055225^2 \quad (5.235)$$

$$0944304^2 + 472000^2 = \mathbf{1}\,055696^2$$
$$\mathbf{12}\,0944304^2 + 5192000^2 = \mathbf{121}\,055696^2$$
$$\mathbf{1232}\,0944304^2 + 52392000^2 = \mathbf{12321}\,055696^2$$
$$\mathbf{123432}\,0944304^2 + 524392000^2 = \mathbf{1234321}\,055696^2 \quad (5.236)$$

$$0943831^2 + 474000^2 = \mathbf{1}\,056169^2$$
$$\mathbf{12}\,0943831^2 + 5214000^2 = \mathbf{121}\,056169^2$$
$$\mathbf{1232}\,0943831^2 + 52614000^2 = \mathbf{12321}\,056169^2$$
$$\mathbf{123432}\,0943831^2 + 526614000^2 = \mathbf{1234321}\,056169^2 \quad (5.237)$$

$$0943356^2 + 476000^2 = \mathbf{1}\,056644^2$$
$$\mathbf{12}\,0943356^2 + 5236000^2 = \mathbf{121}\,056644^2$$
$$\mathbf{1232}\,0943356^2 + 52836000^2 = \mathbf{12321}\,056644^2$$
$$\mathbf{123432}\,0943356^2 + 528836000^2 = \mathbf{1234321}\,056644^2 \quad (5.238)$$

$$0942879^2 + 478000^2 = \mathbf{1}\,057121^2$$
$$\mathbf{12}\,0942879^2 + 5258000^2 = \mathbf{121}\,057121^2$$
$$\mathbf{1232}\,0942879^2 + 53058000^2 = \mathbf{12321}\,057121^2$$
$$\mathbf{123432}\,0942879^2 + 531058000^2 = \mathbf{1234321}\,057121^2 \quad (5.239)$$

$$0942400^2 + 480000^2 = \mathbf{1}\,057600^2$$
$$\mathbf{12}\,0942400^2 + 5280000^2 = \mathbf{121}\,057600^2$$
$$\mathbf{1232}\,0942400^2 + 53280000^2 = \mathbf{12321}\,057600^2$$
$$\mathbf{123432}\,0942400^2 + 533280000^2 = \mathbf{1234321}\,057600^2 \quad (5.240)$$

$$0941919^2 + 482000^2 = \mathbf{1}\,058081^2$$
$$\mathbf{12}\,0941919^2 + 5302000^2 = \mathbf{121}\,058081^2$$
$$\mathbf{1232}\,0941919^2 + 53502000^2 = \mathbf{12321}\,058081^2$$
$$\mathbf{123432}\,0941919^2 + 535502000^2 = \mathbf{1234321}\,058081^2 \quad (5.241)$$

$$0941436^2 + 484000^2 = \mathbf{1}\,058564^2$$
$$\mathbf{12}\,0941436^2 + 5324000^2 = \mathbf{121}\,058564^2$$
$$\mathbf{1232}\,0941436^2 + 53724000^2 = \mathbf{12321}\,058564^2$$
$$\mathbf{123432}\,0941436^2 + 537724000^2 = \mathbf{1234321}\,058564^2 \quad (5.242)$$

$$0940951^2 + 486000^2 = \mathbf{1}\,059049^2$$
$$\mathbf{12}\,0940951^2 + 5346000^2 = \mathbf{121}\,059049^2$$
$$\mathbf{1232}\,0940951^2 + 53946000^2 = \mathbf{12321}\,059049^2$$
$$\mathbf{123432}\,0940951^2 + 539946000^2 = \mathbf{1234321}\,059049^2 \quad (5.243)$$

$$0940464^2 + 488000^2 = \mathbf{1}\,059536^2$$
$$\mathbf{12}\,0940464^2 + 5368000^2 = \mathbf{121}\,059536^2$$
$$\mathbf{1232}\,0940464^2 + 54168000^2 = \mathbf{12321}\,059536^2$$
$$\mathbf{123432}\,0940464^2 + 542168000^2 = \mathbf{1234321}\,059536^2 \quad (5.244)$$

$$0939975^2 + 490000^2 = \mathbf{1}\,060025^2$$
$$\mathbf{12}\,0939975^2 + 5390000^2 = \mathbf{121}\,060025^2$$
$$\mathbf{1232}\,0939975^2 + 54390000^2 = \mathbf{12321}\,060025^2$$
$$\mathbf{123432}\,0939975^2 + 544390000^2 = \mathbf{1234321}\,060025^2 \quad (5.245)$$

$$0939484^2 + 492000^2 = \mathbf{1}\,060516^2$$
$$\mathbf{12}\,0939484^2 + 5412000^2 = \mathbf{121}\,060516^2$$
$$\mathbf{1232}\,0939484^2 + 54612000^2 = \mathbf{12321}\,060516^2$$
$$\mathbf{123432}\,0939484^2 + 546612000^2 = \mathbf{1234321}\,060516^2 \quad (5.246)$$

$$0938991^2 + 494000^2 = \mathbf{1}\,061009^2$$
$$\mathbf{12}\,0938991^2 + 5434000^2 = \mathbf{121}\,061009^2$$
$$\mathbf{1232}\,0938991^2 + 54834000^2 = \mathbf{12321}\,061009^2$$
$$\mathbf{123432}\,0938991^2 + 548834000^2 = \mathbf{1234321}\,061009^2 \quad (5.247)$$

$$0938496^2 + 496000^2 = \mathbf{1}\,061504^2$$
$$\mathbf{12}\,0938496^2 + 5456000^2 = \mathbf{121}\,061504^2$$
$$\mathbf{1232}\,0938496^2 + 55056000^2 = \mathbf{12321}\,061504^2$$
$$\mathbf{123432}\,0938496^2 + 551056000^2 = \mathbf{1234321}\,061504^2 \quad (5.248)$$

$$0937999^2 + 498000^2 = \mathbf{1}\,062001^2$$
$$\mathbf{12}\,0937999^2 + 5478000^2 = \mathbf{121}\,062001^2$$
$$\mathbf{1232}\,0937999^2 + 55278000^2 = \mathbf{12321}\,062001^2$$
$$\mathbf{123432}\,0937999^2 + 553278000^2 = \mathbf{1234321}\,062001^2 \quad (5.249)$$

$$0937500^2 + 500000^2 \quad = \mathbf{1}\,062500^2$$
$$\mathbf{12}\,0937500^2 + 5500000^2 \quad = \mathbf{121}\,062500^2$$
$$\mathbf{1232}\,0937500^2 + 55500000^2 = \mathbf{12321}\,062500^2$$
$$\mathbf{123432}\,0937500^2 + 555500000^2 = \mathbf{1234321}\,062500^2 \quad (5.250)$$

$$0936999^2 + 502000^2 \quad = \mathbf{1}\,063001^2$$
$$\mathbf{12}\,0936999^2 + 5522000^2 \quad = \mathbf{121}\,063001^2$$
$$\mathbf{1232}\,0936999^2 + 55722000^2 = \mathbf{12321}\,063001^2$$
$$\mathbf{123432}\,0936999^2 + 557722000^2 = \mathbf{1234321}\,063001^2 \quad (5.251)$$

$$0936496^2 + 504000^2 \quad = \mathbf{1}\,063504^2$$
$$\mathbf{12}\,0936496^2 + 5544000^2 \quad = \mathbf{121}\,063504^2$$
$$\mathbf{1232}\,0936496^2 + 55944000^2 = \mathbf{12321}\,063504^2$$
$$\mathbf{123432}\,0936496^2 + 559944000^2 = \mathbf{1234321}\,063504^2 \quad (5.252)$$

$$0935991^2 + 506000^2 \quad = \mathbf{1}\,064009^2$$
$$\mathbf{12}\,0935991^2 + 5566000^2 \quad = \mathbf{121}\,064009^2$$
$$\mathbf{1232}\,0935991^2 + 56166000^2 = \mathbf{12321}\,064009^2$$
$$\mathbf{123432}\,0935991^2 + 562166000^2 = \mathbf{1234321}\,064009^2 \quad (5.253)$$

$$0935484^2 + 508000^2 \quad = \mathbf{1}\,064516^2$$
$$\mathbf{12}\,0935484^2 + 5588000^2 \quad = \mathbf{121}\,064516^2$$
$$\mathbf{1232}\,0935484^2 + 56388000^2 = \mathbf{12321}\,064516^2$$
$$\mathbf{123432}\,0935484^2 + 564388000^2 = \mathbf{1234321}\,064516^2 \quad (5.254)$$

$$0934975^2 + 510000^2 \quad = \mathbf{1}\,065025^2$$
$$\mathbf{12}\,0934975^2 + 5610000^2 \quad = \mathbf{121}\,065025^2$$
$$\mathbf{1232}\,0934975^2 + 56610000^2 = \mathbf{12321}\,065025^2$$
$$\mathbf{123432}\,0934975^2 + 566610000^2 = \mathbf{1234321}\,065025^2 \quad (5.255)$$

$$0934464^2 + 512000^2 \quad = \mathbf{1}\,065536^2$$
$$\mathbf{12}\,0934464^2 + 5632000^2 \quad = \mathbf{121}\,065536^2$$
$$\mathbf{1232}\,0934464^2 + 56832000^2 = \mathbf{12321}\,065536^2$$
$$\mathbf{123432}\,0934464^2 + 568832000^2 = \mathbf{1234321}\,065536^2 \quad (5.256)$$

$$0933951^2 + 514000^2 \quad = \mathbf{1}\,066049^2$$
$$\mathbf{12}\,0933951^2 + 5654000^2 \quad = \mathbf{121}\,066049^2$$
$$\mathbf{1232}\,0933951^2 + 57054000^2 = \mathbf{12321}\,066049^2$$
$$\mathbf{123432}\,0933951^2 + 571054000^2 = \mathbf{1234321}\,066049^2 \quad (5.257)$$

$$0933436^2 + 516000^2 \quad = \mathbf{1}\,066564^2$$
$$\mathbf{12}\,0933436^2 + 5676000^2 \quad = \mathbf{121}\,066564^2$$
$$\mathbf{1232}\,0933436^2 + 57276000^2 = \mathbf{12321}\,066564^2$$
$$\mathbf{123432}\,0933436^2 + 573276000^2 = \mathbf{1234321}\,066564^2 \quad (5.258)$$

$$0932919^2 + 518000^2 \quad = \mathbf{1}\,067081^2$$
$$\mathbf{12}\,0932919^2 + 5698000^2 \quad = \mathbf{121}\,067081^2$$
$$\mathbf{1232}\,0932919^2 + 57498000^2 = \mathbf{12321}\,067081^2$$
$$\mathbf{123432}\,0932919^2 + 575498000^2 = \mathbf{1234321}\,067081^2 \quad (5.259)$$

$$0932400^2 + 520000^2 \quad = \mathbf{1}\,067600^2$$
$$\mathbf{12}\,0932400^2 + 5720000^2 \quad = \mathbf{121}\,067600^2$$
$$\mathbf{1232}\,0932400^2 + 57720000^2 = \mathbf{12321}\,067600^2$$
$$\mathbf{123432}\,0932400^2 + 577720000^2 = \mathbf{1234321}\,067600^2 \quad (5.260)$$

$$0931879^2 + 522000^2 \quad = \mathbf{1}\,068121^2$$
$$\mathbf{12}\,0931879^2 + 5742000^2 \quad = \mathbf{121}\,068121^2$$
$$\mathbf{1232}\,0931879^2 + 57942000^2 = \mathbf{12321}\,068121^2$$
$$\mathbf{123432}\,0931879^2 + 579942000^2 = \mathbf{1234321}\,068121^2 \quad (5.261)$$

$$0931356^2 + 524000^2 \quad = \mathbf{1}\,068644^2$$
$$\mathbf{12}\,0931356^2 + 5764000^2 \quad = \mathbf{121}\,068644^2$$
$$\mathbf{1232}\,0931356^2 + 58164000^2 = \mathbf{12321}\,068644^2$$
$$\mathbf{123432}\,0931356^2 + 582164000^2 = \mathbf{1234321}\,068644^2 \quad (5.262)$$

$$0930831^2 + 526000^2 \quad = \mathbf{1}\,069169^2$$
$$\mathbf{12}\,0930831^2 + 5786000^2 \quad = \mathbf{121}\,069169^2$$
$$\mathbf{1232}\,0930831^2 + 58386000^2 = \mathbf{12321}\,069169^2$$
$$\mathbf{123432}\,0930831^2 + 584386000^2 = \mathbf{1234321}\,069169^2 \quad (5.263)$$

$$0930304^2 + 528000^2 \quad = \mathbf{1}\,069696^2$$
$$\mathbf{12}\,0930304^2 + 5808000^2 \quad = \mathbf{121}\,069696^2$$
$$\mathbf{1232}\,0930304^2 + 58608000^2 = \mathbf{12321}\,069696^2$$
$$\mathbf{123432}\,0930304^2 + 586608000^2 = \mathbf{1234321}\,069696^2 \quad (5.264)$$

$$0929775^2 + 530000^2 \quad = \mathbf{1}\,070225^2$$
$$\mathbf{12}\,0929775^2 + 5830000^2 \quad = \mathbf{121}\,070225^2$$
$$\mathbf{1232}\,0929775^2 + 58830000^2 = \mathbf{12321}\,070225^2$$
$$\mathbf{123432}\,0929775^2 + 588830000^2 = \mathbf{1234321}\,070225^2 \quad (5.265)$$

$$0929244^2 + 532000^2 \quad = \mathbf{1}\,070756^2$$
$$\mathbf{12}\,0929244^2 + 5852000^2 \quad = \mathbf{121}\,070756^2$$
$$\mathbf{1232}\,0929244^2 + 59052000^2 = \mathbf{12321}\,070756^2$$
$$\mathbf{123432}\,0929244^2 + 591052000^2 = \mathbf{1234321}\,070756^2 \quad (5.266)$$

$0928711^2 + 534000^2 \quad = \mathbf{1}\,071289^2$

$\mathbf{12}\,0928711^2 + 5874000^2 \quad = \mathbf{121}\,071289^2$

$\mathbf{1232}\,0928711^2 + 59274000^2 = \mathbf{12321}\,071289^2$

$\mathbf{123432}\,0928711^2 + 593274000^2 = \mathbf{1234321}\,071289^2 \quad (5.267)$

$0928176^2 + 536000^2 \quad = \mathbf{1}\,071824^2$

$\mathbf{12}\,0928176^2 + 5896000^2 \quad = \mathbf{121}\,071824^2$

$\mathbf{1232}\,0928176^2 + 59496000^2 = \mathbf{12321}\,071824^2$

$\mathbf{123432}\,0928176^2 + 595496000^2 = \mathbf{1234321}\,071824^2 \quad (5.268)$

$0927639^2 + 538000^2 \quad = \mathbf{1}\,072361^2$

$\mathbf{12}\,0927639^2 + 5918000^2 \quad = \mathbf{121}\,072361^2$

$\mathbf{1232}\,0927639^2 + 59718000^2 = \mathbf{12321}\,072361^2$

$\mathbf{123432}\,0927639^2 + 597718000^2 = \mathbf{1234321}\,072361^2 \quad (5.269)$

$0927100^2 + 540000^2 \quad = \mathbf{1}\,072900^2$

$\mathbf{12}\,0927100^2 + 5940000^2 \quad = \mathbf{121}\,072900^2$

$\mathbf{1232}\,0927100^2 + 59940000^2 = \mathbf{12321}\,072900^2$

$\mathbf{123432}\,0927100^2 + 599940000^2 = \mathbf{1234321}\,072900^2 \quad (5.270)$

$0926559^2 + 542000^2 \quad = \mathbf{1}\,073441^2$

$\mathbf{12}\,0926559^2 + 5962000^2 \quad = \mathbf{121}\,073441^2$

$\mathbf{1232}\,0926559^2 + 60162000^2 = \mathbf{12321}\,073441^2$

$\mathbf{123432}\,0926559^2 + 602162000^2 = \mathbf{1234321}\,073441^2 \quad (5.271)$

$0926016^2 + 544000^2 \quad = \mathbf{1}\,073984^2$

$\mathbf{12}\,0926016^2 + 5984000^2 \quad = \mathbf{121}\,073984^2$

$\mathbf{1232}\,0926016^2 + 60384000^2 = \mathbf{12321}\,073984^2$

$\mathbf{123432}\,0926016^2 + 604384000^2 = \mathbf{1234321}\,073984^2 \quad (5.272)$

$0925471^2 + 546000^2 \quad = \mathbf{1}\,074529^2$

$\mathbf{12}\,0925471^2 + 6006000^2 \quad = \mathbf{121}\,074529^2$

$\mathbf{1232}\,0925471^2 + 60606000^2 = \mathbf{12321}\,074529^2$

$\mathbf{123432}\,0925471^2 + 606606000^2 = \mathbf{1234321}\,074529^2 \quad (5.273)$

$0924924^2 + 548000^2 \quad = \mathbf{1}\,075076^2$

$\mathbf{12}\,0924924^2 + 6028000^2 \quad = \mathbf{121}\,075076^2$

$\mathbf{1232}\,0924924^2 + 60828000^2 = \mathbf{12321}\,075076^2$

$\mathbf{123432}\,0924924^2 + 608828000^2 = \mathbf{1234321}\,075076^2 \quad (5.274)$

$0924375^2 + 550000^2 \quad = \mathbf{1}\,075625^2$

$\mathbf{12}\,0924375^2 + 6050000^2 \quad = \mathbf{121}\,075625^2$

$\mathbf{1232}\,0924375^2 + 61050000^2 = \mathbf{12321}\,075625^2$

$\mathbf{123432}\,0924375^2 + 611050000^2 = \mathbf{1234321}\,075625^2 \quad (5.275)$

$0923824^2 + 552000^2 \quad = \mathbf{1}\,076176^2$

$\mathbf{12}\,0923824^2 + 6072000^2 \quad = \mathbf{121}\,076176^2$

$\mathbf{1232}\,0923824^2 + 61272000^2 = \mathbf{12321}\,076176^2$

$\mathbf{123432}\,0923824^2 + 613272000^2 = \mathbf{1234321}\,076176^2 \quad (5.276)$

$0923271^2 + 554000^2 \quad = \mathbf{1}\,076729^2$

$\mathbf{12}\,0923271^2 + 6094000^2 \quad = \mathbf{121}\,076729^2$

$\mathbf{1232}\,0923271^2 + 61494000^2 = \mathbf{12321}\,076729^2$

$\mathbf{123432}\,0923271^2 + 615494000^2 = \mathbf{1234321}\,076729^2 \quad (5.277)$

$0922716^2 + 556000^2 \quad = \mathbf{1}\,077284^2$

$\mathbf{12}\,0922716^2 + 6116000^2 \quad = \mathbf{121}\,077284^2$

$\mathbf{1232}\,0922716^2 + 61716000^2 = \mathbf{12321}\,077284^2$

$\mathbf{123432}\,0922716^2 + 617716000^2 = \mathbf{1234321}\,077284^2 \quad (5.278)$

$0922159^2 + 558000^2 \quad = \mathbf{1}\,077841^2$

$\mathbf{12}\,0922159^2 + 6138000^2 \quad = \mathbf{121}\,077841^2$

$\mathbf{1232}\,0922159^2 + 61938000^2 = \mathbf{12321}\,077841^2$

$\mathbf{123432}\,0922159^2 + 619938000^2 = \mathbf{1234321}\,077841^2 \quad (5.279)$

$0921600^2 + 560000^2 \quad = \mathbf{1}\,078400^2$

$\mathbf{12}\,0921600^2 + 6160000^2 \quad = \mathbf{121}\,078400^2$

$\mathbf{1232}\,0921600^2 + 62160000^2 = \mathbf{12321}\,078400^2$

$\mathbf{123432}\,0921600^2 + 622160000^2 = \mathbf{1234321}\,078400^2 \quad (5.280)$

$0921039^2 + 562000^2 \quad = \mathbf{1}\,078961^2$

$\mathbf{12}\,0921039^2 + 6182000^2 \quad = \mathbf{121}\,078961^2$

$\mathbf{1232}\,0921039^2 + 62382000^2 = \mathbf{12321}\,078961^2$

$\mathbf{123432}\,0921039^2 + 624382000^2 = \mathbf{1234321}\,078961^2 \quad (5.281)$

$0920476^2 + 564000^2 \quad = \mathbf{1}\,079524^2$

$\mathbf{12}\,0920476^2 + 6204000^2 \quad = \mathbf{121}\,079524^2$

$\mathbf{1232}\,0920476^2 + 62604000^2 = \mathbf{12321}\,079524^2$

$\mathbf{123432}\,0920476^2 + 626604000^2 = \mathbf{1234321}\,079524^2 \quad (5.282)$

$0919911^2 + 566000^2 \quad = \mathbf{1}\,080089^2$

$\mathbf{12}\,0919911^2 + 6226000^2 \quad = \mathbf{121}\,080089^2$

$\mathbf{1232}\,0919911^2 + 62826000^2 = \mathbf{12321}\,080089^2$

$\mathbf{123432}\,0919911^2 + 628826000^2 = \mathbf{1234321}\,080089^2 \quad (5.283)$

$$0919344^2 + 568000^2 = \mathbf{1}\,080656^2$$
$$\mathbf{12}\,0919344^2 + 6248000^2 = \mathbf{121}\,080656^2$$
$$\mathbf{1232}\,0919344^2 + 63048000^2 = \mathbf{12321}\,080656^2$$
$$\mathbf{123432}\,0919344^2 + 631048000^2 = \mathbf{1234321}\,080656^2 \quad (5.284)$$

$$0918775^2 + 570000^2 = \mathbf{1}\,081225^2$$
$$\mathbf{12}\,0918775^2 + 6270000^2 = \mathbf{121}\,081225^2$$
$$\mathbf{1232}\,0918775^2 + 63270000^2 = \mathbf{12321}\,081225^2$$
$$\mathbf{123432}\,0918775^2 + 633270000^2 = \mathbf{1234321}\,081225^2 \quad (5.285)$$

$$0918204^2 + 572000^2 = \mathbf{1}\,081796^2$$
$$\mathbf{12}\,0918204^2 + 6292000^2 = \mathbf{121}\,081796^2$$
$$\mathbf{1232}\,0918204^2 + 63492000^2 = \mathbf{12321}\,081796^2$$
$$\mathbf{123432}\,0918204^2 + 635492000^2 = \mathbf{1234321}\,081796^2 \quad (5.286)$$

$$0917631^2 + 574000^2 = \mathbf{1}\,082369^2$$
$$\mathbf{12}\,0917631^2 + 6314000^2 = \mathbf{121}\,082369^2$$
$$\mathbf{1232}\,0917631^2 + 63714000^2 = \mathbf{12321}\,082369^2$$
$$\mathbf{123432}\,0917631^2 + 637714000^2 = \mathbf{1234321}\,082369^2 \quad (5.287)$$

$$0917056^2 + 576000^2 = \mathbf{1}\,082944^2$$
$$\mathbf{12}\,0917056^2 + 6336000^2 = \mathbf{121}\,082944^2$$
$$\mathbf{1232}\,0917056^2 + 63936000^2 = \mathbf{12321}\,082944^2$$
$$\mathbf{123432}\,0917056^2 + 639936000^2 = \mathbf{1234321}\,082944^2 \quad (5.288)$$

$$0916479^2 + 578000^2 = \mathbf{1}\,083521^2$$
$$\mathbf{12}\,0916479^2 + 6358000^2 = \mathbf{121}\,083521^2$$
$$\mathbf{1232}\,0916479^2 + 64158000^2 = \mathbf{12321}\,083521^2$$
$$\mathbf{123432}\,0916479^2 + 642158000^2 = \mathbf{1234321}\,083521^2 \quad (5.289)$$

$$0915900^2 + 580000^2 = \mathbf{1}\,084100^2$$
$$\mathbf{12}\,0915900^2 + 6380000^2 = \mathbf{121}\,084100^2$$
$$\mathbf{1232}\,0915900^2 + 64380000^2 = \mathbf{12321}\,084100^2$$
$$\mathbf{123432}\,0915900^2 + 644380000^2 = \mathbf{1234321}\,084100^2 \quad (5.290)$$

$$0915319^2 + 582000^2 = \mathbf{1}\,084681^2$$
$$\mathbf{12}\,0915319^2 + 6402000^2 = \mathbf{121}\,084681^2$$
$$\mathbf{1232}\,0915319^2 + 64602000^2 = \mathbf{12321}\,084681^2$$
$$\mathbf{123432}\,0915319^2 + 646602000^2 = \mathbf{1234321}\,084681^2 \quad (5.291)$$

$$0914736^2 + 584000^2 = \mathbf{1}\,085264^2$$
$$\mathbf{12}\,0914736^2 + 6424000^2 = \mathbf{121}\,085264^2$$
$$\mathbf{1232}\,0914736^2 + 64824000^2 = \mathbf{12321}\,085264^2$$
$$\mathbf{123432}\,0914736^2 + 648824000^2 = \mathbf{1234321}\,085264^2 \quad (5.292)$$

$$0914151^2 + 586000^2 = \mathbf{1}\,085849^2$$
$$\mathbf{12}\,0914151^2 + 6446000^2 = \mathbf{121}\,085849^2$$
$$\mathbf{1232}\,0914151^2 + 65046000^2 = \mathbf{12321}\,085849^2$$
$$\mathbf{123432}\,0914151^2 + 651046000^2 = \mathbf{1234321}\,085849^2 \quad (5.293)$$

$$0913564^2 + 588000^2 = \mathbf{1}\,086436^2$$
$$\mathbf{12}\,0913564^2 + 6468000^2 = \mathbf{121}\,086436^2$$
$$\mathbf{1232}\,0913564^2 + 65268000^2 = \mathbf{12321}\,086436^2$$
$$\mathbf{123432}\,0913564^2 + 653268000^2 = \mathbf{1234321}\,086436^2 \quad (5.294)$$

$$0912975^2 + 590000^2 = \mathbf{1}\,087025^2$$
$$\mathbf{12}\,0912975^2 + 6490000^2 = \mathbf{121}\,087025^2$$
$$\mathbf{1232}\,0912975^2 + 65490000^2 = \mathbf{12321}\,087025^2$$
$$\mathbf{123432}\,0912975^2 + 655490000^2 = \mathbf{1234321}\,087025^2 \quad (5.295)$$

$$0912384^2 + 592000^2 = \mathbf{1}\,087616^2$$
$$\mathbf{12}\,0912384^2 + 6512000^2 = \mathbf{121}\,087616^2$$
$$\mathbf{1232}\,0912384^2 + 65712000^2 = \mathbf{12321}\,087616^2$$
$$\mathbf{123432}\,0912384^2 + 657712000^2 = \mathbf{1234321}\,087616^2 \quad (5.296)$$

$$0911791^2 + 594000^2 = \mathbf{1}\,088209^2$$
$$\mathbf{12}\,0911791^2 + 6534000^2 = \mathbf{121}\,088209^2$$
$$\mathbf{1232}\,0911791^2 + 65934000^2 = \mathbf{12321}\,088209^2$$
$$\mathbf{123432}\,0911791^2 + 659934000^2 = \mathbf{1234321}\,088209^2 \quad (5.297)$$

$$0911196^2 + 596000^2 = \mathbf{1}\,088804^2$$
$$\mathbf{12}\,0911196^2 + 6556000^2 = \mathbf{121}\,088804^2$$
$$\mathbf{1232}\,0911196^2 + 66156000^2 = \mathbf{12321}\,088804^2$$
$$\mathbf{123432}\,0911196^2 + 662156000^2 = \mathbf{1234321}\,088804^2 \quad (5.298)$$

$$0910599^2 + 598000^2 = \mathbf{1}\,089401^2$$
$$\mathbf{12}\,0910599^2 + 6578000^2 = \mathbf{121}\,089401^2$$
$$\mathbf{1232}\,0910599^2 + 66378000^2 = \mathbf{12321}\,089401^2$$
$$\mathbf{123432}\,0910599^2 + 664378000^2 = \mathbf{1234321}\,089401^2 \quad (5.299)$$

5.4   For $n = 300, \ 301, \ 301, \ ..., 397, \ 398, \ 399$:

Let's consider

$m = 1000, \ 11000, \ 111000, \ 1111000, \ 11111000, \ 111111000, \ 1111111000, \ 11111111000, \ 111111111000$

in (1.1), then for each value of $n = 300, \ 301, \ 301, \ ..., 397, \ 398, \ 399$; there are 100 *palindromic-type pandigital Pythagorean patterns* given below. In each case, only first four values are written. The other 5 values can be written on similar lines as done in subsection 5.1.1.

$$0910000^2 + 600000^2 \ \ = \mathbf{1}\,090000^2$$
$$\mathbf{12}\,0910000^2 + 6600000^2 \ \ = \mathbf{121}\,090000^2$$
$$\mathbf{1232}\,0910000^2 + 66600000^2 \ = \mathbf{12321}\,090000^2$$
$$\mathbf{123432}\,0910000^2 + 666600000^2 = \mathbf{1234321}\,090000^2 \quad (5.300)$$

$$0909399^2 + 602000^2 \ \ = \mathbf{1}\,090601^2$$
$$\mathbf{12}\,0909399^2 + 6622000^2 \ \ = \mathbf{121}\,090601^2$$
$$\mathbf{1232}\,0909399^2 + 66822000^2 \ = \mathbf{12321}\,090601^2$$
$$\mathbf{123432}\,0909399^2 + 668822000^2 = \mathbf{1234321}\,090601^2 \quad (5.301)$$

$$0908796^2 + 604000^2 \ \ = \mathbf{1}\,091204^2$$
$$\mathbf{12}\,0908796^2 + 6644000^2 \ \ = \mathbf{121}\,091204^2$$
$$\mathbf{1232}\,0908796^2 + 67044000^2 \ = \mathbf{12321}\,091204^2$$
$$\mathbf{123432}\,0908796^2 + 671044000^2 = \mathbf{1234321}\,091204^2 \quad (5.302)$$

$$0908191^2 + 606000^2 \ \ = \mathbf{1}\,091809^2$$
$$\mathbf{12}\,0908191^2 + 6666000^2 \ \ = \mathbf{121}\,091809^2$$
$$\mathbf{1232}\,0908191^2 + 67266000^2 \ = \mathbf{12321}\,091809^2$$
$$\mathbf{123432}\,0908191^2 + 673266000^2 = \mathbf{1234321}\,091809^2 \quad (5.303)$$

$$0907584^2 + 608000^2 \ \ = \mathbf{1}\,092416^2$$
$$\mathbf{12}\,0907584^2 + 6688000^2 \ \ = \mathbf{121}\,092416^2$$
$$\mathbf{1232}\,0907584^2 + 67488000^2 \ = \mathbf{12321}\,092416^2$$
$$\mathbf{123432}\,0907584^2 + 675488000^2 = \mathbf{1234321}\,092416^2 \quad (5.304)$$

$$0906975^2 + 610000^2 \ \ = \mathbf{1}\,093025^2$$
$$\mathbf{12}\,0906975^2 + 6710000^2 \ \ = \mathbf{121}\,093025^2$$
$$\mathbf{1232}\,0906975^2 + 67710000^2 \ = \mathbf{12321}\,093025^2$$
$$\mathbf{123432}\,0906975^2 + 677710000^2 = \mathbf{1234321}\,093025^2 \quad (5.305)$$

$$0906364^2 + 612000^2 \ \ = \mathbf{1}\,093636^2$$
$$\mathbf{12}\,0906364^2 + 6732000^2 \ \ = \mathbf{121}\,093636^2$$
$$\mathbf{1232}\,0906364^2 + 67932000^2 \ = \mathbf{12321}\,093636^2$$
$$\mathbf{123432}\,0906364^2 + 679932000^2 = \mathbf{1234321}\,093636^2 \quad (5.306)$$

$$0905751^2 + 614000^2 \ \ = \mathbf{1}\,094249^2$$
$$\mathbf{12}\,0905751^2 + 6754000^2 \ \ = \mathbf{121}\,094249^2$$
$$\mathbf{1232}\,0905751^2 + 68154000^2 \ = \mathbf{12321}\,094249^2$$
$$\mathbf{123432}\,0905751^2 + 682154000^2 = \mathbf{1234321}\,094249^2 \quad (5.307)$$

$$0905136^2 + 616000^2 \ \ = \mathbf{1}\,094864^2$$
$$\mathbf{12}\,0905136^2 + 6776000^2 \ \ = \mathbf{121}\,094864^2$$
$$\mathbf{1232}\,0905136^2 + 68376000^2 \ = \mathbf{12321}\,094864^2$$
$$\mathbf{123432}\,0905136^2 + 684376000^2 = \mathbf{1234321}\,094864^2 \quad (5.308)$$

$$0904519^2 + 618000^2 \ \ = \mathbf{1}\,095481^2$$
$$\mathbf{12}\,0904519^2 + 6798000^2 \ \ = \mathbf{121}\,095481^2$$
$$\mathbf{1232}\,0904519^2 + 68598000^2 \ = \mathbf{12321}\,095481^2$$
$$\mathbf{123432}\,0904519^2 + 686598000^2 = \mathbf{1234321}\,095481^2 \quad (5.309)$$

$$0903900^2 + 620000^2 \ \ = \mathbf{1}\,096100^2$$
$$\mathbf{12}\,0903900^2 + 6820000^2 \ \ = \mathbf{121}\,096100^2$$
$$\mathbf{1232}\,0903900^2 + 68820000^2 \ = \mathbf{12321}\,096100^2$$
$$\mathbf{123432}\,0903900^2 + 688820000^2 = \mathbf{1234321}\,096100^2 \quad (5.310)$$

$$0903279^2 + 622000^2 \ \ = \mathbf{1}\,096721^2$$
$$\mathbf{12}\,0903279^2 + 6842000^2 \ \ = \mathbf{121}\,096721^2$$
$$\mathbf{1232}\,0903279^2 + 69042000^2 \ = \mathbf{12321}\,096721^2$$
$$\mathbf{123432}\,0903279^2 + 691042000^2 = \mathbf{1234321}\,096721^2 \quad (5.311)$$

$$0902656^2 + 624000^2 \ \ = \mathbf{1}\,097344^2$$
$$\mathbf{12}\,0902656^2 + 6864000^2 \ \ = \mathbf{121}\,097344^2$$
$$\mathbf{1232}\,0902656^2 + 69264000^2 \ = \mathbf{12321}\,097344^2$$
$$\mathbf{123432}\,0902656^2 + 693264000^2 = \mathbf{1234321}\,097344^2 \quad (5.312)$$

$$0902031^2 + 626000^2 \ \ = \mathbf{1}\,097969^2$$
$$\mathbf{12}\,0902031^2 + 6886000^2 \ \ = \mathbf{121}\,097969^2$$
$$\mathbf{1232}\,0902031^2 + 69486000^2 \ = \mathbf{12321}\,097969^2$$
$$\mathbf{123432}\,0902031^2 + 695486000^2 = \mathbf{1234321}\,097969^2 \quad (5.313)$$

$$0901404^2 + 628000^2 = \mathbf{1}\,098596^2$$
$$\mathbf{12}\,0901404^2 + 6908000^2 = \mathbf{121}\,098596^2$$
$$\mathbf{1232}\,0901404^2 + 69708000^2 = \mathbf{12321}\,098596^2$$
$$\mathbf{123432}\,0901404^2 + 697708000^2 = \mathbf{1234321}\,098596^2 \quad (5.314)$$

$$0900775^2 + 630000^2 = \mathbf{1}\,099225^2$$
$$\mathbf{12}\,0900775^2 + 6930000^2 = \mathbf{121}\,099225^2$$
$$\mathbf{1232}\,0900775^2 + 69930000^2 = \mathbf{12321}\,099225^2$$
$$\mathbf{123432}\,0900775^2 + 699930000^2 = \mathbf{1234321}\,099225^2 \quad (5.315)$$

$$0900144^2 + 632000^2 = \mathbf{1}\,099856^2$$
$$\mathbf{12}\,0900144^2 + 6952000^2 = \mathbf{121}\,099856^2$$
$$\mathbf{1232}\,0900144^2 + 70152000^2 = \mathbf{12321}\,099856^2$$
$$\mathbf{123432}\,0900144^2 + 702152000^2 = \mathbf{1234321}\,099856^2 \quad (5.316)$$

$$0899511^2 + 634000^2 = \mathbf{1}\,100489^2$$
$$\mathbf{12}\,0899511^2 + 6974000^2 = \mathbf{121}\,100489^2$$
$$\mathbf{1232}\,0899511^2 + 70374000^2 = \mathbf{12321}\,100489^2$$
$$\mathbf{123432}\,0899511^2 + 704374000^2 = \mathbf{1234321}\,100489^2 \quad (5.317)$$

$$0898876^2 + 636000^2 = \mathbf{1}\,101124^2$$
$$\mathbf{12}\,0898876^2 + 6996000^2 = \mathbf{121}\,101124^2$$
$$\mathbf{1232}\,0898876^2 + 70596000^2 = \mathbf{12321}\,101124^2$$
$$\mathbf{123432}\,0898876^2 + 706596000^2 = \mathbf{1234321}\,101124^2 \quad (5.318)$$

$$0898239^2 + 638000^2 = \mathbf{1}\,101761^2$$
$$\mathbf{12}\,0898239^2 + 7018000^2 = \mathbf{121}\,101761^2$$
$$\mathbf{1232}\,0898239^2 + 70818000^2 = \mathbf{12321}\,101761^2$$
$$\mathbf{123432}\,0898239^2 + 708818000^2 = \mathbf{1234321}\,101761^2 \quad (5.319)$$

$$0897600^2 + 640000^2 = \mathbf{1}\,102400^2$$
$$\mathbf{12}\,0897600^2 + 7040000^2 = \mathbf{121}\,102400^2$$
$$\mathbf{1232}\,0897600^2 + 71040000^2 = \mathbf{12321}\,102400^2$$
$$\mathbf{123432}\,0897600^2 + 711040000^2 = \mathbf{1234321}\,102400^2 \quad (5.320)$$

$$0896959^2 + 642000^2 = \mathbf{1}\,103041^2$$
$$\mathbf{12}\,0896959^2 + 7062000^2 = \mathbf{121}\,103041^2$$
$$\mathbf{1232}\,0896959^2 + 71262000^2 = \mathbf{12321}\,103041^2$$
$$\mathbf{123432}\,0896959^2 + 713262000^2 = \mathbf{1234321}\,103041^2 \quad (5.321)$$

$$0896316^2 + 644000^2 = \mathbf{1}\,103684^2$$
$$\mathbf{12}\,0896316^2 + 7084000^2 = \mathbf{121}\,103684^2$$
$$\mathbf{1232}\,0896316^2 + 71484000^2 = \mathbf{12321}\,103684^2$$
$$\mathbf{123432}\,0896316^2 + 715484000^2 = \mathbf{1234321}\,103684^2 \quad (5.322)$$

$$0895671^2 + 646000^2 = \mathbf{1}\,104329^2$$
$$\mathbf{12}\,0895671^2 + 7106000^2 = \mathbf{121}\,104329^2$$
$$\mathbf{1232}\,0895671^2 + 71706000^2 = \mathbf{12321}\,104329^2$$
$$\mathbf{123432}\,0895671^2 + 717706000^2 = \mathbf{1234321}\,104329^2 \quad (5.323)$$

$$0895024^2 + 648000^2 = \mathbf{1}\,104976^2$$
$$\mathbf{12}\,0895024^2 + 7128000^2 = \mathbf{121}\,104976^2$$
$$\mathbf{1232}\,0895024^2 + 71928000^2 = \mathbf{12321}\,104976^2$$
$$\mathbf{123432}\,0895024^2 + 719928000^2 = \mathbf{1234321}\,104976^2 \quad (5.324)$$

$$0894375^2 + 650000^2 = \mathbf{1}\,105625^2$$
$$\mathbf{12}\,0894375^2 + 7150000^2 = \mathbf{121}\,105625^2$$
$$\mathbf{1232}\,0894375^2 + 72150000^2 = \mathbf{12321}\,105625^2$$
$$\mathbf{123432}\,0894375^2 + 722150000^2 = \mathbf{1234321}\,105625^2 \quad (5.325)$$

$$0893724^2 + 652000^2 = \mathbf{1}\,106276^2$$
$$\mathbf{12}\,0893724^2 + 7172000^2 = \mathbf{121}\,106276^2$$
$$\mathbf{1232}\,0893724^2 + 72372000^2 = \mathbf{12321}\,106276^2$$
$$\mathbf{123432}\,0893724^2 + 724372000^2 = \mathbf{1234321}\,106276^2 \quad (5.326)$$

$$0893071^2 + 654000^2 = \mathbf{1}\,106929^2$$
$$\mathbf{12}\,0893071^2 + 7194000^2 = \mathbf{121}\,106929^2$$
$$\mathbf{1232}\,0893071^2 + 72594000^2 = \mathbf{12321}\,106929^2$$
$$\mathbf{123432}\,0893071^2 + 726594000^2 = \mathbf{1234321}\,106929^2 \quad (5.327)$$

$$0892416^2 + 656000^2 = \mathbf{1}\,107584^2$$
$$\mathbf{12}\,0892416^2 + 7216000^2 = \mathbf{121}\,107584^2$$
$$\mathbf{1232}\,0892416^2 + 72816000^2 = \mathbf{12321}\,107584^2$$
$$\mathbf{123432}\,0892416^2 + 728816000^2 = \mathbf{1234321}\,107584^2 \quad (5.328)$$

$$0891759^2 + 658000^2 = \mathbf{1}\,108241^2$$
$$\mathbf{12}\,0891759^2 + 7238000^2 = \mathbf{121}\,108241^2$$
$$\mathbf{1232}\,0891759^2 + 73038000^2 = \mathbf{12321}\,108241^2$$
$$\mathbf{123432}\,0891759^2 + 731038000^2 = \mathbf{1234321}\,108241^2 \quad (5.329)$$

$$0891100^2 + 660000^2 = \mathbf{1}\,108900^2$$
$$\mathbf{12}\,0891100^2 + 7260000^2 = \mathbf{121}\,108900^2$$
$$\mathbf{1232}\,0891100^2 + 73260000^2 = \mathbf{12321}\,108900^2$$
$$\mathbf{123432}\,0891100^2 + 733260000^2 = \mathbf{1234321}\,108900^2 \quad (5.330)$$

$$0890439^2 + 662000^2 \quad = \mathbf{1}\,109561^2$$
$$\mathbf{12}\,0890439^2 + 7282000^2 \quad = \mathbf{121}\,109561^2$$
$$\mathbf{1232}\,0890439^2 + 73482000^2 = \mathbf{12321}\,109561^2$$
$$\mathbf{123432}\,0890439^2 + 735482000^2 = \mathbf{1234321}\,109561^2 \quad (5.331)$$

$$0889776^2 + 664000^2 \quad = \mathbf{1}\,110224^2$$
$$\mathbf{12}\,0889776^2 + 7304000^2 \quad = \mathbf{121}\,110224^2$$
$$\mathbf{1232}\,0889776^2 + 73704000^2 = \mathbf{12321}\,110224^2$$
$$\mathbf{123432}\,0889776^2 + 737704000^2 = \mathbf{1234321}\,110224^2 \quad (5.332)$$

$$0889111^2 + 666000^2 \quad = \mathbf{1}\,110889^2$$
$$\mathbf{12}\,0889111^2 + 7326000^2 \quad = \mathbf{121}\,110889^2$$
$$\mathbf{1232}\,0889111^2 + 73926000^2 = \mathbf{12321}\,110889^2$$
$$\mathbf{123432}\,0889111^2 + 739926000^2 = \mathbf{1234321}\,110889^2 \quad (5.333)$$

$$0888444^2 + 668000^2 \quad = \mathbf{1}\,111556^2$$
$$\mathbf{12}\,0888444^2 + 7348000^2 \quad = \mathbf{121}\,111556^2$$
$$\mathbf{1232}\,0888444^2 + 74148000^2 = \mathbf{12321}\,111556^2$$
$$\mathbf{123432}\,0888444^2 + 742148000^2 = \mathbf{1234321}\,111556^2 \quad (5.334)$$

$$0887775^2 + 670000^2 \quad = \mathbf{1}\,112225^2$$
$$\mathbf{12}\,0887775^2 + 7370000^2 \quad = \mathbf{121}\,112225^2$$
$$\mathbf{1232}\,0887775^2 + 74370000^2 = \mathbf{12321}\,112225^2$$
$$\mathbf{123432}\,0887775^2 + 744370000^2 = \mathbf{1234321}\,112225^2 \quad (5.335)$$

$$0887104^2 + 672000^2 \quad = \mathbf{1}\,112896^2$$
$$\mathbf{12}\,0887104^2 + 7392000^2 \quad = \mathbf{121}\,112896^2$$
$$\mathbf{1232}\,0887104^2 + 74592000^2 = \mathbf{12321}\,112896^2$$
$$\mathbf{123432}\,0887104^2 + 746592000^2 = \mathbf{1234321}\,112896^2 \quad (5.336)$$

$$0886431^2 + 674000^2 \quad = \mathbf{1}\,113569^2$$
$$\mathbf{12}\,0886431^2 + 7414000^2 \quad = \mathbf{121}\,113569^2$$
$$\mathbf{1232}\,0886431^2 + 74814000^2 = \mathbf{12321}\,113569^2$$
$$\mathbf{123432}\,0886431^2 + 748814000^2 = \mathbf{1234321}\,113569^2 \quad (5.337)$$

$$0885756^2 + 676000^2 \quad = \mathbf{1}\,114244^2$$
$$\mathbf{12}\,0885756^2 + 7436000^2 \quad = \mathbf{121}\,114244^2$$
$$\mathbf{1232}\,0885756^2 + 75036000^2 = \mathbf{12321}\,114244^2$$
$$\mathbf{123432}\,0885756^2 + 751036000^2 = \mathbf{1234321}\,114244^2 \quad (5.338)$$

$$0885079^2 + 678000^2 \quad = \mathbf{1}\,114921^2$$
$$\mathbf{12}\,0885079^2 + 7458000^2 \quad = \mathbf{121}\,114921^2$$
$$\mathbf{1232}\,0885079^2 + 75258000^2 = \mathbf{12321}\,114921^2$$
$$\mathbf{123432}\,0885079^2 + 753258000^2 = \mathbf{1234321}\,114921^2 \quad (5.339)$$

$$0884400^2 + 680000^2 \quad = \mathbf{1}\,115600^2$$
$$\mathbf{12}\,0884400^2 + 7480000^2 \quad = \mathbf{121}\,115600^2$$
$$\mathbf{1232}\,0884400^2 + 75480000^2 = \mathbf{12321}\,115600^2$$
$$\mathbf{123432}\,0884400^2 + 755480000^2 = \mathbf{1234321}\,115600^2 \quad (5.340)$$

$$0883719^2 + 682000^2 \quad = \mathbf{1}\,116281^2$$
$$\mathbf{12}\,0883719^2 + 7502000^2 \quad = \mathbf{121}\,116281^2$$
$$\mathbf{1232}\,0883719^2 + 75702000^2 = \mathbf{12321}\,116281^2$$
$$\mathbf{123432}\,0883719^2 + 757702000^2 = \mathbf{1234321}\,116281^2 \quad (5.341)$$

$$0883036^2 + 684000^2 \quad = \mathbf{1}\,116964^2$$
$$\mathbf{12}\,0883036^2 + 7524000^2 \quad = \mathbf{121}\,116964^2$$
$$\mathbf{1232}\,0883036^2 + 75924000^2 = \mathbf{12321}\,116964^2$$
$$\mathbf{123432}\,0883036^2 + 759924000^2 = \mathbf{1234321}\,116964^2 \quad (5.342)$$

$$0882351^2 + 686000^2 \quad = \mathbf{1}\,117649^2$$
$$\mathbf{12}\,0882351^2 + 7546000^2 \quad = \mathbf{121}\,117649^2$$
$$\mathbf{1232}\,0882351^2 + 76146000^2 = \mathbf{12321}\,117649^2$$
$$\mathbf{123432}\,0882351^2 + 762146000^2 = \mathbf{1234321}\,117649^2 \quad (5.343)$$

$$0881664^2 + 688000^2 \quad = \mathbf{1}\,118336^2$$
$$\mathbf{12}\,0881664^2 + 7568000^2 \quad = \mathbf{121}\,118336^2$$
$$\mathbf{1232}\,0881664^2 + 76368000^2 = \mathbf{12321}\,118336^2$$
$$\mathbf{123432}\,0881664^2 + 764368000^2 = \mathbf{1234321}\,118336^2 \quad (5.344)$$

$$0880975^2 + 690000^2 \quad = \mathbf{1}\,119025^2$$
$$\mathbf{12}\,0880975^2 + 7590000^2 \quad = \mathbf{121}\,119025^2$$
$$\mathbf{1232}\,0880975^2 + 76590000^2 = \mathbf{12321}\,119025^2$$
$$\mathbf{123432}\,0880975^2 + 766590000^2 = \mathbf{1234321}\,119025^2 \quad (5.345)$$

$$0880284^2 + 692000^2 \quad = \mathbf{1}\,119716^2$$
$$\mathbf{12}\,0880284^2 + 7612000^2 \quad = \mathbf{121}\,119716^2$$
$$\mathbf{1232}\,0880284^2 + 76812000^2 = \mathbf{12321}\,119716^2$$
$$\mathbf{123432}\,0880284^2 + 768812000^2 = \mathbf{1234321}\,119716^2 \quad (5.346)$$

$$0879591^2 + 694000^2 \quad = \mathbf{1}\,120409^2$$
$$\mathbf{12}\,0879591^2 + 7634000^2 \quad = \mathbf{121}\,120409^2$$
$$\mathbf{1232}\,0879591^2 + 77034000^2 = \mathbf{12321}\,120409^2$$
$$\mathbf{123432}\,0879591^2 + 771034000^2 = \mathbf{1234321}\,120409^2 \quad (5.347)$$

$0878896^2 + 696000^2 \quad = \mathbf{1}\,121104^2$

$\mathbf{12}\,0878896^2 + 7656000^2 \quad = \mathbf{121}\,121104^2$

$\mathbf{1232}\,0878896^2 + 77256000^2 = \mathbf{12321}\,121104^2$

$\mathbf{123432}\,0878896^2 + 773256000^2 = \mathbf{1234321}\,121104^2 \quad (5.348)$

$0878199^2 + 698000^2 \quad = \mathbf{1}\,121801^2$

$\mathbf{12}\,0878199^2 + 7678000^2 \quad = \mathbf{121}\,121801^2$

$\mathbf{1232}\,0878199^2 + 77478000^2 = \mathbf{12321}\,121801^2$

$\mathbf{123432}\,0878199^2 + 775478000^2 = \mathbf{1234321}\,121801^2 \quad (5.349)$

$0877500^2 + 700000^2 \quad = \mathbf{1}\,122500^2$

$\mathbf{12}\,0877500^2 + 7700000^2 \quad = \mathbf{121}\,122500^2$

$\mathbf{1232}\,0877500^2 + 77700000^2 = \mathbf{12321}\,122500^2$

$\mathbf{123432}\,0877500^2 + 777700000^2 = \mathbf{1234321}\,122500^2 \quad (5.350)$

$0876799^2 + 702000^2 \quad = \mathbf{1}\,123201^2$

$\mathbf{12}\,0876799^2 + 7722000^2 \quad = \mathbf{121}\,123201^2$

$\mathbf{1232}\,0876799^2 + 77922000^2 = \mathbf{12321}\,123201^2$

$\mathbf{123432}\,0876799^2 + 779922000^2 = \mathbf{1234321}\,123201^2 \quad (5.351)$

$0876096^2 + 704000^2 \quad = \mathbf{1}\,123904^2$

$\mathbf{12}\,0876096^2 + 7744000^2 \quad = \mathbf{121}\,123904^2$

$\mathbf{1232}\,0876096^2 + 78144000^2 = \mathbf{12321}\,123904^2$

$\mathbf{123432}\,0876096^2 + 782144000^2 = \mathbf{1234321}\,123904^2 \quad (5.352)$

$0875391^2 + 706000^2 \quad = \mathbf{1}\,124609^2$

$\mathbf{12}\,0875391^2 + 7766000^2 \quad = \mathbf{121}\,124609^2$

$\mathbf{1232}\,0875391^2 + 78366000^2 = \mathbf{12321}\,124609^2$

$\mathbf{123432}\,0875391^2 + 784366000^2 = \mathbf{1234321}\,124609^2 \quad (5.353)$

$0874684^2 + 708000^2 \quad = \mathbf{1}\,125316^2$

$\mathbf{12}\,0874684^2 + 7788000^2 \quad = \mathbf{121}\,125316^2$

$\mathbf{1232}\,0874684^2 + 78588000^2 = \mathbf{12321}\,125316^2$

$\mathbf{123432}\,0874684^2 + 786588000^2 = \mathbf{1234321}\,125316^2 \quad (5.354)$

$0873975^2 + 710000^2 \quad = \mathbf{1}\,126025^2$

$\mathbf{12}\,0873975^2 + 7810000^2 \quad = \mathbf{121}\,126025^2$

$\mathbf{1232}\,0873975^2 + 78810000^2 = \mathbf{12321}\,126025^2$

$\mathbf{123432}\,0873975^2 + 788810000^2 = \mathbf{1234321}\,126025^2 \quad (5.355)$

$0873264^2 + 712000^2 \quad = \mathbf{1}\,126736^2$

$\mathbf{12}\,0873264^2 + 7832000^2 \quad = \mathbf{121}\,126736^2$

$\mathbf{1232}\,0873264^2 + 79032000^2 = \mathbf{12321}\,126736^2$

$\mathbf{123432}\,0873264^2 + 791032000^2 = \mathbf{1234321}\,126736^2 \quad (5.356)$

$0872551^2 + 714000^2 \quad = \mathbf{1}\,127449^2$

$\mathbf{12}\,0872551^2 + 7854000^2 \quad = \mathbf{121}\,127449^2$

$\mathbf{1232}\,0872551^2 + 79254000^2 = \mathbf{12321}\,127449^2$

$\mathbf{123432}\,0872551^2 + 793254000^2 = \mathbf{1234321}\,127449^2 \quad (5.357)$

$0871836^2 + 716000^2 \quad = \mathbf{1}\,128164^2$

$\mathbf{12}\,0871836^2 + 7876000^2 \quad = \mathbf{121}\,128164^2$

$\mathbf{1232}\,0871836^2 + 79476000^2 = \mathbf{12321}\,128164^2$

$\mathbf{123432}\,0871836^2 + 795476000^2 = \mathbf{1234321}\,128164^2 \quad (5.358)$

$0871119^2 + 718000^2 \quad = \mathbf{1}\,128881^2$

$\mathbf{12}\,0871119^2 + 7898000^2 \quad = \mathbf{121}\,128881^2$

$\mathbf{1232}\,0871119^2 + 79698000^2 = \mathbf{12321}\,128881^2$

$\mathbf{123432}\,0871119^2 + 797698000^2 = \mathbf{1234321}\,128881^2 \quad (5.359)$

$0870400^2 + 720000^2 \quad = \mathbf{1}\,129600^2$

$\mathbf{12}\,0870400^2 + 7920000^2 \quad = \mathbf{121}\,129600^2$

$\mathbf{1232}\,0870400^2 + 79920000^2 = \mathbf{12321}\,129600^2$

$\mathbf{123432}\,0870400^2 + 799920000^2 = \mathbf{1234321}\,129600^2 \quad (5.360)$

$0869679^2 + 722000^2 \quad = \mathbf{1}\,130321^2$

$\mathbf{12}\,0869679^2 + 7942000^2 \quad = \mathbf{121}\,130321^2$

$\mathbf{1232}\,0869679^2 + 80142000^2 = \mathbf{12321}\,130321^2$

$\mathbf{123432}\,0869679^2 + 802142000^2 = \mathbf{1234321}\,130321^2 \quad (5.361)$

$0868956^2 + 724000^2 \quad = \mathbf{1}\,131044^2$

$\mathbf{12}\,0868956^2 + 7964000^2 \quad = \mathbf{121}\,131044^2$

$\mathbf{1232}\,0868956^2 + 80364000^2 = \mathbf{12321}\,131044^2$

$\mathbf{123432}\,0868956^2 + 804364000^2 = \mathbf{1234321}\,131044^2 \quad (5.362)$

$0868231^2 + 726000^2 \quad = \mathbf{1}\,131769^2$

$\mathbf{12}\,0868231^2 + 7986000^2 \quad = \mathbf{121}\,131769^2$

$\mathbf{1232}\,0868231^2 + 80586000^2 = \mathbf{12321}\,131769^2$

$\mathbf{123432}\,0868231^2 + 806586000^2 = \mathbf{1234321}\,131769^2 \quad (5.363)$

$0867504^2 + 728000^2 \quad = \mathbf{1}\,132496^2$

$\mathbf{12}\,0867504^2 + 8008000^2 \quad = \mathbf{121}\,132496^2$

$\mathbf{1232}\,0867504^2 + 80808000^2 = \mathbf{12321}\,132496^2$

$\mathbf{123432}\,0867504^2 + 808808000^2 = \mathbf{1234321}\,132496^2 \quad (5.364)$

$$0866775^2 + 730000^2 \quad = \mathbf{1}\,133225^2$$
$$\mathbf{12}\,0866775^2 + 8030000^2 \quad = \mathbf{121}\,133225^2$$
$$\mathbf{1232}\,0866775^2 + 81030000^2 \quad = \mathbf{12321}\,133225^2$$
$$\mathbf{123432}\,0866775^2 + 811030000^2 = \mathbf{1234321}\,133225^2 \quad (5.365)$$

$$0866044^2 + 732000^2 \quad = \mathbf{1}\,133956^2$$
$$\mathbf{12}\,0866044^2 + 8052000^2 \quad = \mathbf{121}\,133956^2$$
$$\mathbf{1232}\,0866044^2 + 81252000^2 \quad = \mathbf{12321}\,133956^2$$
$$\mathbf{123432}\,0866044^2 + 813252000^2 = \mathbf{1234321}\,133956^2 \quad (5.366)$$

$$0865311^2 + 734000^2 \quad = \mathbf{1}\,134689^2$$
$$\mathbf{12}\,0865311^2 + 8074000^2 \quad = \mathbf{121}\,134689^2$$
$$\mathbf{1232}\,0865311^2 + 81474000^2 \quad = \mathbf{12321}\,134689^2$$
$$\mathbf{123432}\,0865311^2 + 815474000^2 = \mathbf{1234321}\,134689^2 \quad (5.367)$$

$$0864576^2 + 736000^2 \quad = \mathbf{1}\,135424^2$$
$$\mathbf{12}\,0864576^2 + 8096000^2 \quad = \mathbf{121}\,135424^2$$
$$\mathbf{1232}\,0864576^2 + 81696000^2 \quad = \mathbf{12321}\,135424^2$$
$$\mathbf{123432}\,0864576^2 + 817696000^2 = \mathbf{1234321}\,135424^2 \quad (5.368)$$

$$0863839^2 + 738000^2 \quad = \mathbf{1}\,136161^2$$
$$\mathbf{12}\,0863839^2 + 8118000^2 \quad = \mathbf{121}\,136161^2$$
$$\mathbf{1232}\,0863839^2 + 81918000^2 \quad = \mathbf{12321}\,136161^2$$
$$\mathbf{123432}\,0863839^2 + 819918000^2 = \mathbf{1234321}\,136161^2 \quad (5.369)$$

$$0863100^2 + 740000^2 \quad = \mathbf{1}\,136900^2$$
$$\mathbf{12}\,0863100^2 + 8140000^2 \quad = \mathbf{121}\,136900^2$$
$$\mathbf{1232}\,0863100^2 + 82140000^2 \quad = \mathbf{12321}\,136900^2$$
$$\mathbf{123432}\,0863100^2 + 822140000^2 = \mathbf{1234321}\,136900^2 \quad (5.370)$$

$$0862359^2 + 742000^2 \quad = \mathbf{1}\,137641^2$$
$$\mathbf{12}\,0862359^2 + 8162000^2 \quad = \mathbf{121}\,137641^2$$
$$\mathbf{1232}\,0862359^2 + 82362000^2 \quad = \mathbf{12321}\,137641^2$$
$$\mathbf{123432}\,0862359^2 + 824362000^2 = \mathbf{1234321}\,137641^2 \quad (5.371)$$

$$0861616^2 + 744000^2 \quad = \mathbf{1}\,138384^2$$
$$\mathbf{12}\,0861616^2 + 8184000^2 \quad = \mathbf{121}\,138384^2$$
$$\mathbf{1232}\,0861616^2 + 82584000^2 \quad = \mathbf{12321}\,138384^2$$
$$\mathbf{123432}\,0861616^2 + 826584000^2 = \mathbf{1234321}\,138384^2 \quad (5.372)$$

$$0860871^2 + 746000^2 \quad = \mathbf{1}\,139129^2$$
$$\mathbf{12}\,0860871^2 + 8206000^2 \quad = \mathbf{121}\,139129^2$$
$$\mathbf{1232}\,0860871^2 + 82806000^2 \quad = \mathbf{12321}\,139129^2$$
$$\mathbf{123432}\,0860871^2 + 828806000^2 = \mathbf{1234321}\,139129^2 \quad (5.373)$$

$$0860124^2 + 748000^2 \quad = \mathbf{1}\,139876^2$$
$$\mathbf{12}\,0860124^2 + 8228000^2 \quad = \mathbf{121}\,139876^2$$
$$\mathbf{1232}\,0860124^2 + 83028000^2 \quad = \mathbf{12321}\,139876^2$$
$$\mathbf{123432}\,0860124^2 + 831028000^2 = \mathbf{1234321}\,139876^2 \quad (5.374)$$

$$0859375^2 + 750000^2 \quad = \mathbf{1}\,140625^2$$
$$\mathbf{12}\,0859375^2 + 8250000^2 \quad = \mathbf{121}\,140625^2$$
$$\mathbf{1232}\,0859375^2 + 83250000^2 \quad = \mathbf{12321}\,140625^2$$
$$\mathbf{123432}\,0859375^2 + 833250000^2 = \mathbf{1234321}\,140625^2 \quad (5.375)$$

$$0858624^2 + 752000^2 \quad = \mathbf{1}\,141376^2$$
$$\mathbf{12}\,0858624^2 + 8272000^2 \quad = \mathbf{121}\,141376^2$$
$$\mathbf{1232}\,0858624^2 + 83472000^2 \quad = \mathbf{12321}\,141376^2$$
$$\mathbf{123432}\,0858624^2 + 835472000^2 = \mathbf{1234321}\,141376^2 \quad (5.376)$$

$$0857871^2 + 754000^2 \quad = \mathbf{1}\,142129^2$$
$$\mathbf{12}\,0857871^2 + 8294000^2 \quad = \mathbf{121}\,142129^2$$
$$\mathbf{1232}\,0857871^2 + 83694000^2 \quad = \mathbf{12321}\,142129^2$$
$$\mathbf{123432}\,0857871^2 + 837694000^2 = \mathbf{1234321}\,142129^2 \quad (5.377)$$

$$0857116^2 + 756000^2 \quad = \mathbf{1}\,142884^2$$
$$\mathbf{12}\,0857116^2 + 8316000^2 \quad = \mathbf{121}\,142884^2$$
$$\mathbf{1232}\,0857116^2 + 83916000^2 \quad = \mathbf{12321}\,142884^2$$
$$\mathbf{123432}\,0857116^2 + 839916000^2 = \mathbf{1234321}\,142884^2 \quad (5.378)$$

$$0856359^2 + 758000^2 \quad = \mathbf{1}\,143641^2$$
$$\mathbf{12}\,0856359^2 + 8338000^2 \quad = \mathbf{121}\,143641^2$$
$$\mathbf{1232}\,0856359^2 + 84138000^2 \quad = \mathbf{12321}\,143641^2$$
$$\mathbf{123432}\,0856359^2 + 842138000^2 = \mathbf{1234321}\,143641^2 \quad (5.379)$$

$$0855600^2 + 760000^2 \quad = \mathbf{1}\,144400^2$$
$$\mathbf{12}\,0855600^2 + 8360000^2 \quad = \mathbf{121}\,144400^2$$
$$\mathbf{1232}\,0855600^2 + 84360000^2 \quad = \mathbf{12321}\,144400^2$$
$$\mathbf{123432}\,0855600^2 + 844360000^2 = \mathbf{1234321}\,144400^2 \quad (5.380)$$

$$0854839^2 + 762000^2 \quad = \mathbf{1}\,145161^2$$
$$\mathbf{12}\,0854839^2 + 8382000^2 \quad = \mathbf{121}\,145161^2$$
$$\mathbf{1232}\,0854839^2 + 84582000^2 \quad = \mathbf{12321}\,145161^2$$
$$\mathbf{123432}\,0854839^2 + 846582000^2 = \mathbf{1234321}\,145161^2 \quad (5.381)$$

$0854076^2 + 764000^2 \quad = \mathbf{1}\,145924^2$

$\mathbf{12}\,0854076^2 + 8404000^2 \quad = \mathbf{121}\,145924^2$

$\mathbf{1232}\,0854076^2 + 84804000^2 \quad = \mathbf{12321}\,145924^2$

$\mathbf{123432}\,0854076^2 + 848804000^2 = \mathbf{1234321}\,145924^2 \quad (5.382)$

$0853311^2 + 766000^2 \quad = \mathbf{1}\,146689^2$

$\mathbf{12}\,0853311^2 + 8426000^2 \quad = \mathbf{121}\,146689^2$

$\mathbf{1232}\,0853311^2 + 85026000^2 \quad = \mathbf{12321}\,146689^2$

$\mathbf{123432}\,0853311^2 + 851026000^2 = \mathbf{1234321}\,146689^2 \quad (5.383)$

$0852544^2 + 768000^2 \quad = \mathbf{1}\,147456^2$

$\mathbf{12}\,0852544^2 + 8448000^2 \quad = \mathbf{121}\,147456^2$

$\mathbf{1232}\,0852544^2 + 85248000^2 \quad = \mathbf{12321}\,147456^2$

$\mathbf{123432}\,0852544^2 + 853248000^2 = \mathbf{1234321}\,147456^2 \quad (5.384)$

$0851775^2 + 770000^2 \quad = \mathbf{1}\,148225^2$

$\mathbf{12}\,0851775^2 + 8470000^2 \quad = \mathbf{121}\,148225^2$

$\mathbf{1232}\,0851775^2 + 85470000^2 \quad = \mathbf{12321}\,148225^2$

$\mathbf{123432}\,0851775^2 + 855470000^2 = \mathbf{1234321}\,148225^2 \quad (5.385)$

$0851004^2 + 772000^2 \quad = \mathbf{1}\,148996^2$

$\mathbf{12}\,0851004^2 + 8492000^2 \quad = \mathbf{121}\,148996^2$

$\mathbf{1232}\,0851004^2 + 85692000^2 \quad = \mathbf{12321}\,148996^2$

$\mathbf{123432}\,0851004^2 + 857692000^2 = \mathbf{1234321}\,148996^2 \quad (5.386)$

$0850231^2 + 774000^2 \quad = \mathbf{1}\,149769^2$

$\mathbf{12}\,0850231^2 + 8514000^2 \quad = \mathbf{121}\,149769^2$

$\mathbf{1232}\,0850231^2 + 85914000^2 \quad = \mathbf{12321}\,149769^2$

$\mathbf{123432}\,0850231^2 + 859914000^2 = \mathbf{1234321}\,149769^2 \quad (5.387)$

$0849456^2 + 776000^2 \quad = \mathbf{1}\,150544^2$

$\mathbf{12}\,0849456^2 + 8536000^2 \quad = \mathbf{121}\,150544^2$

$\mathbf{1232}\,0849456^2 + 86136000^2 \quad = \mathbf{12321}\,150544^2$

$\mathbf{123432}\,0849456^2 + 862136000^2 = \mathbf{1234321}\,150544^2 \quad (5.388)$

$0848679^2 + 778000^2 \quad = \mathbf{1}\,151321^2$

$\mathbf{12}\,0848679^2 + 8558000^2 \quad = \mathbf{121}\,151321^2$

$\mathbf{1232}\,0848679^2 + 86358000^2 \quad = \mathbf{12321}\,151321^2$

$\mathbf{123432}\,0848679^2 + 864358000^2 = \mathbf{1234321}\,151321^2 \quad (5.389)$

$0847900^2 + 780000^2 \quad = \mathbf{1}\,152100^2$

$\mathbf{12}\,0847900^2 + 8580000^2 \quad = \mathbf{121}\,152100^2$

$\mathbf{1232}\,0847900^2 + 86580000^2 \quad = \mathbf{12321}\,152100^2$

$\mathbf{123432}\,0847900^2 + 866580000^2 = \mathbf{1234321}\,152100^2 \quad (5.390)$

$0847119^2 + 782000^2 \quad = \mathbf{1}\,152881^2$

$\mathbf{12}\,0847119^2 + 8602000^2 \quad = \mathbf{121}\,152881^2$

$\mathbf{1232}\,0847119^2 + 86802000^2 \quad = \mathbf{12321}\,152881^2$

$\mathbf{123432}\,0847119^2 + 868802000^2 = \mathbf{1234321}\,152881^2 \quad (5.391)$

$0846336^2 + 784000^2 \quad = \mathbf{1}\,153664^2$

$\mathbf{12}\,0846336^2 + 8624000^2 \quad = \mathbf{121}\,153664^2$

$\mathbf{1232}\,0846336^2 + 87024000^2 \quad = \mathbf{12321}\,153664^2$

$\mathbf{123432}\,0846336^2 + 871024000^2 = \mathbf{1234321}\,153664^2 \quad (5.392)$

$0845551^2 + 786000^2 \quad = \mathbf{1}\,154449^2$

$\mathbf{12}\,0845551^2 + 8646000^2 \quad = \mathbf{121}\,154449^2$

$\mathbf{1232}\,0845551^2 + 87246000^2 \quad = \mathbf{12321}\,154449^2$

$\mathbf{123432}\,0845551^2 + 873246000^2 = \mathbf{1234321}\,154449^2 \quad (5.393)$

$0844764^2 + 788000^2 \quad = \mathbf{1}\,155236^2$

$\mathbf{12}\,0844764^2 + 8668000^2 \quad = \mathbf{121}\,155236^2$

$\mathbf{1232}\,0844764^2 + 87468000^2 \quad = \mathbf{12321}\,155236^2$

$\mathbf{123432}\,0844764^2 + 875468000^2 = \mathbf{1234321}\,155236^2 \quad (5.394)$

$0843975^2 + 790000^2 \quad = \mathbf{1}\,156025^2$

$\mathbf{12}\,0843975^2 + 8690000^2 \quad = \mathbf{121}\,156025^2$

$\mathbf{1232}\,0843975^2 + 87690000^2 \quad = \mathbf{12321}\,156025^2$

$\mathbf{123432}\,0843975^2 + 877690000^2 = \mathbf{1234321}\,156025^2 \quad (5.395)$

$0843184^2 + 792000^2 \quad = \mathbf{1}\,156816^2$

$\mathbf{12}\,0843184^2 + 8712000^2 \quad = \mathbf{121}\,156816^2$

$\mathbf{1232}\,0843184^2 + 87912000^2 \quad = \mathbf{12321}\,156816^2$

$\mathbf{123432}\,0843184^2 + 879912000^2 = \mathbf{1234321}\,156816^2 \quad (5.396)$

$0842391^2 + 794000^2 \quad = \mathbf{1}\,157609^2$

$\mathbf{12}\,0842391^2 + 8734000^2 \quad = \mathbf{121}\,157609^2$

$\mathbf{1232}\,0842391^2 + 88134000^2 \quad = \mathbf{12321}\,157609^2$

$\mathbf{123432}\,0842391^2 + 882134000^2 = \mathbf{1234321}\,157609^2 \quad (5.397)$

$0841596^2 + 796000^2 \quad = \mathbf{1}\,158404^2$

$\mathbf{12}\,0841596^2 + 8756000^2 \quad = \mathbf{121}\,158404^2$

$\mathbf{1232}\,0841596^2 + 88356000^2 \quad = \mathbf{12321}\,158404^2$

$\mathbf{123432}\,0841596^2 + 884356000^2 = \mathbf{1234321}\,158404^2 \quad (5.398)$

$0840799^2 + 798000^2 \quad = \mathbf{1}\,159201^2$

$\mathbf{12}\,0840799^2 + 8778000^2 \quad = \mathbf{121}\,159201^2$

$\mathbf{1232}\,0840799^2 + 88578000^2 \quad = \mathbf{12321}\,159201^2$

$\mathbf{123432}\,0840799^2 + 886578000^2 = \mathbf{1234321}\,159201^2 \quad (5.399)$

5.5 For $n = 400,\ 401,\ 401,\ ..., 497,\ 498,\ 499$:

Let's consider

$m = 1000,\ 11000,\ 111000,\ 1111000,\ 11111000,\ 111111000,\ 1111111000,\ 11111111000,\ 111111111000$

in (1.1), then for each value of $n = 400,\ 401,\ 401,\ ..., 497,\ 498,\ 499$; there are 100 *palindromic-type pandigital Pythagorean patterns* given below. In each case, only first four values are written. The other 5 values can be written on similar lines as done in subsection 5.1.1.

$0840000^2 + 800000^2 = \mathbf{1}\,160000^2$
$\mathbf{12}\,0840000^2 + 8800000^2 = \mathbf{121}\,160000^2$
$\mathbf{1232}\,0840000^2 + 88800000^2 = \mathbf{12321}\,160000^2$
$\mathbf{123432}\,0840000^2 + 888800000^2 = \mathbf{1234321}\,160000^2$ (5.400)

$0839199^2 + 802000^2 = \mathbf{1}\,160801^2$
$\mathbf{12}\,0839199^2 + 8822000^2 = \mathbf{121}\,160801^2$
$\mathbf{1232}\,0839199^2 + 89022000^2 = \mathbf{12321}\,160801^2$
$\mathbf{123432}\,0839199^2 + 891022000^2 = \mathbf{1234321}\,160801^2$ (5.401)

$0838396^2 + 804000^2 = \mathbf{1}\,161604^2$
$\mathbf{12}\,0838396^2 + 8844000^2 = \mathbf{121}\,161604^2$
$\mathbf{1232}\,0838396^2 + 89244000^2 = \mathbf{12321}\,161604^2$
$\mathbf{123432}\,0838396^2 + 893244000^2 = \mathbf{1234321}\,161604^2$ (5.402)

$0837591^2 + 806000^2 = \mathbf{1}\,162409^2$
$\mathbf{12}\,0837591^2 + 8866000^2 = \mathbf{121}\,162409^2$
$\mathbf{1232}\,0837591^2 + 89466000^2 = \mathbf{12321}\,162409^2$
$\mathbf{123432}\,0837591^2 + 895466000^2 = \mathbf{1234321}\,162409^2$ (5.403)

$0836784^2 + 808000^2 = \mathbf{1}\,163216^2$
$\mathbf{12}\,0836784^2 + 8888000^2 = \mathbf{121}\,163216^2$
$\mathbf{1232}\,0836784^2 + 89688000^2 = \mathbf{12321}\,163216^2$
$\mathbf{123432}\,0836784^2 + 897688000^2 = \mathbf{1234321}\,163216^2$ (5.404)

$0835975^2 + 810000^2 = \mathbf{1}\,164025^2$
$\mathbf{12}\,0835975^2 + 8910000^2 = \mathbf{121}\,164025^2$
$\mathbf{1232}\,0835975^2 + 89910000^2 = \mathbf{12321}\,164025^2$
$\mathbf{123432}\,0835975^2 + 899910000^2 = \mathbf{1234321}\,164025^2$ (5.405)

$0835164^2 + 812000^2 = \mathbf{1}\,164836^2$
$\mathbf{12}\,0835164^2 + 8932000^2 = \mathbf{121}\,164836^2$
$\mathbf{1232}\,0835164^2 + 90132000^2 = \mathbf{12321}\,164836^2$
$\mathbf{123432}\,0835164^2 + 902132000^2 = \mathbf{1234321}\,164836^2$ (5.406)

$0834351^2 + 814000^2 = \mathbf{1}\,165649^2$
$\mathbf{12}\,0834351^2 + 8954000^2 = \mathbf{121}\,165649^2$
$\mathbf{1232}\,0834351^2 + 90354000^2 = \mathbf{12321}\,165649^2$
$\mathbf{123432}\,0834351^2 + 904354000^2 = \mathbf{1234321}\,165649^2$ (5.407)

$0833536^2 + 816000^2 = \mathbf{1}\,166464^2$
$\mathbf{12}\,0833536^2 + 8976000^2 = \mathbf{121}\,166464^2$
$\mathbf{1232}\,0833536^2 + 90576000^2 = \mathbf{12321}\,166464^2$
$\mathbf{123432}\,0833536^2 + 906576000^2 = \mathbf{1234321}\,166464^2$ (5.408)

$0832719^2 + 818000^2 = \mathbf{1}\,167281^2$
$\mathbf{12}\,0832719^2 + 8998000^2 = \mathbf{121}\,167281^2$
$\mathbf{1232}\,0832719^2 + 90798000^2 = \mathbf{12321}\,167281^2$
$\mathbf{123432}\,0832719^2 + 908798000^2 = \mathbf{1234321}\,167281^2$ (5.409)

$0831900^2 + 820000^2 = \mathbf{1}\,168100^2$
$\mathbf{12}\,0831900^2 + 9020000^2 = \mathbf{121}\,168100^2$
$\mathbf{1232}\,0831900^2 + 91020000^2 = \mathbf{12321}\,168100^2$
$\mathbf{123432}\,0831900^2 + 911020000^2 = \mathbf{1234321}\,168100^2$ (5.410)

$0831079^2 + 822000^2 = \mathbf{1}\,168921^2$
$\mathbf{12}\,0831079^2 + 9042000^2 = \mathbf{121}\,168921^2$
$\mathbf{1232}\,0831079^2 + 91242000^2 = \mathbf{12321}\,168921^2$
$\mathbf{123432}\,0831079^2 + 913242000^2 = \mathbf{1234321}\,168921^2$ (5.411)

$0830256^2 + 824000^2 = \mathbf{1}\,169744^2$
$\mathbf{12}\,0830256^2 + 9064000^2 = \mathbf{121}\,169744^2$
$\mathbf{1232}\,0830256^2 + 91464000^2 = \mathbf{12321}\,169744^2$
$\mathbf{123432}\,0830256^2 + 915464000^2 = \mathbf{1234321}\,169744^2$ (5.412)

$0829431^2 + 826000^2 = \mathbf{1}\,170569^2$
$\mathbf{12}\,0829431^2 + 9086000^2 = \mathbf{121}\,170569^2$
$\mathbf{1232}\,0829431^2 + 91686000^2 = \mathbf{12321}\,170569^2$
$\mathbf{123432}\,0829431^2 + 917686000^2 = \mathbf{1234321}\,170569^2$ (5.413)

$$0828604^2 + 828000^2 = \mathbf{1}\,171396^2$$
$$\mathbf{12}\,0828604^2 + 9108000^2 = \mathbf{121}\,171396^2$$
$$\mathbf{1232}\,0828604^2 + 91908000^2 = \mathbf{12321}\,171396^2$$
$$\mathbf{123432}\,0828604^2 + 919908000^2 = \mathbf{1234321}\,171396^2 \quad (5.414)$$

$$0827775^2 + 830000^2 = \mathbf{1}\,172225^2$$
$$\mathbf{12}\,0827775^2 + 9130000^2 = \mathbf{121}\,172225^2$$
$$\mathbf{1232}\,0827775^2 + 92130000^2 = \mathbf{12321}\,172225^2$$
$$\mathbf{123432}\,0827775^2 + 922130000^2 = \mathbf{1234321}\,172225^2 \quad (5.415)$$

$$0826944^2 + 832000^2 = \mathbf{1}\,173056^2$$
$$\mathbf{12}\,0826944^2 + 9152000^2 = \mathbf{121}\,173056^2$$
$$\mathbf{1232}\,0826944^2 + 92352000^2 = \mathbf{12321}\,173056^2$$
$$\mathbf{123432}\,0826944^2 + 924352000^2 = \mathbf{1234321}\,173056^2 \quad (5.416)$$

$$0826111^2 + 834000^2 = \mathbf{1}\,173889^2$$
$$\mathbf{12}\,0826111^2 + 9174000^2 = \mathbf{121}\,173889^2$$
$$\mathbf{1232}\,0826111^2 + 92574000^2 = \mathbf{12321}\,173889^2$$
$$\mathbf{123432}\,0826111^2 + 926574000^2 = \mathbf{1234321}\,173889^2 \quad (5.417)$$

$$0825276^2 + 836000^2 = \mathbf{1}\,174724^2$$
$$\mathbf{12}\,0825276^2 + 9196000^2 = \mathbf{121}\,174724^2$$
$$\mathbf{1232}\,0825276^2 + 92796000^2 = \mathbf{12321}\,174724^2$$
$$\mathbf{123432}\,0825276^2 + 928796000^2 = \mathbf{1234321}\,174724^2 \quad (5.418)$$

$$0824439^2 + 838000^2 = \mathbf{1}\,175561^2$$
$$\mathbf{12}\,0824439^2 + 9218000^2 = \mathbf{121}\,175561^2$$
$$\mathbf{1232}\,0824439^2 + 93018000^2 = \mathbf{12321}\,175561^2$$
$$\mathbf{123432}\,0824439^2 + 931018000^2 = \mathbf{1234321}\,175561^2 \quad (5.419)$$

$$0823600^2 + 840000^2 = \mathbf{1}\,176400^2$$
$$\mathbf{12}\,0823600^2 + 9240000^2 = \mathbf{121}\,176400^2$$
$$\mathbf{1232}\,0823600^2 + 93240000^2 = \mathbf{12321}\,176400^2$$
$$\mathbf{123432}\,0823600^2 + 933240000^2 = \mathbf{1234321}\,176400^2 \quad (5.420)$$

$$0822759^2 + 842000^2 = \mathbf{1}\,177241^2$$
$$\mathbf{12}\,0822759^2 + 9262000^2 = \mathbf{121}\,177241^2$$
$$\mathbf{1232}\,0822759^2 + 93462000^2 = \mathbf{12321}\,177241^2$$
$$\mathbf{123432}\,0822759^2 + 935462000^2 = \mathbf{1234321}\,177241^2 \quad (5.421)$$

$$0821916^2 + 844000^2 = \mathbf{1}\,178084^2$$
$$\mathbf{12}\,0821916^2 + 9284000^2 = \mathbf{121}\,178084^2$$
$$\mathbf{1232}\,0821916^2 + 93684000^2 = \mathbf{12321}\,178084^2$$
$$\mathbf{123432}\,0821916^2 + 937684000^2 = \mathbf{1234321}\,178084^2 \quad (5.422)$$

$$0821071^2 + 846000^2 = \mathbf{1}\,178929^2$$
$$\mathbf{12}\,0821071^2 + 9306000^2 = \mathbf{121}\,178929^2$$
$$\mathbf{1232}\,0821071^2 + 93906000^2 = \mathbf{12321}\,178929^2$$
$$\mathbf{123432}\,0821071^2 + 939906000^2 = \mathbf{1234321}\,178929^2 \quad (5.423)$$

$$0820224^2 + 848000^2 = \mathbf{1}\,179776^2$$
$$\mathbf{12}\,0820224^2 + 9328000^2 = \mathbf{121}\,179776^2$$
$$\mathbf{1232}\,0820224^2 + 94128000^2 = \mathbf{12321}\,179776^2$$
$$\mathbf{123432}\,0820224^2 + 942128000^2 = \mathbf{1234321}\,179776^2 \quad (5.424)$$

$$0819375^2 + 850000^2 = \mathbf{1}\,180625^2$$
$$\mathbf{12}\,0819375^2 + 9350000^2 = \mathbf{121}\,180625^2$$
$$\mathbf{1232}\,0819375^2 + 94350000^2 = \mathbf{12321}\,180625^2$$
$$\mathbf{123432}\,0819375^2 + 944350000^2 = \mathbf{1234321}\,180625^2 \quad (5.425)$$

$$0818524^2 + 852000^2 = \mathbf{1}\,181476^2$$
$$\mathbf{12}\,0818524^2 + 9372000^2 = \mathbf{121}\,181476^2$$
$$\mathbf{1232}\,0818524^2 + 94572000^2 = \mathbf{12321}\,181476^2$$
$$\mathbf{123432}\,0818524^2 + 946572000^2 = \mathbf{1234321}\,181476^2 \quad (5.426)$$

$$0817671^2 + 854000^2 = \mathbf{1}\,182329^2$$
$$\mathbf{12}\,0817671^2 + 9394000^2 = \mathbf{121}\,182329^2$$
$$\mathbf{1232}\,0817671^2 + 94794000^2 = \mathbf{12321}\,182329^2$$
$$\mathbf{123432}\,0817671^2 + 948794000^2 = \mathbf{1234321}\,182329^2 \quad (5.427)$$

$$0816816^2 + 856000^2 = \mathbf{1}\,183184^2$$
$$\mathbf{12}\,0816816^2 + 9416000^2 = \mathbf{121}\,183184^2$$
$$\mathbf{1232}\,0816816^2 + 95016000^2 = \mathbf{12321}\,183184^2$$
$$\mathbf{123432}\,0816816^2 + 951016000^2 = \mathbf{1234321}\,183184^2 \quad (5.428)$$

$$0815959^2 + 858000^2 = \mathbf{1}\,184041^2$$
$$\mathbf{12}\,0815959^2 + 9438000^2 = \mathbf{121}\,184041^2$$
$$\mathbf{1232}\,0815959^2 + 95238000^2 = \mathbf{12321}\,184041^2$$
$$\mathbf{123432}\,0815959^2 + 953238000^2 = \mathbf{1234321}\,184041^2 \quad (5.429)$$

$$0815100^2 + 860000^2 = \mathbf{1}\,184900^2$$
$$\mathbf{12}\,0815100^2 + 9460000^2 = \mathbf{121}\,184900^2$$
$$\mathbf{1232}\,0815100^2 + 95460000^2 = \mathbf{12321}\,184900^2$$
$$\mathbf{123432}\,0815100^2 + 955460000^2 = \mathbf{1234321}\,184900^2 \quad (5.430)$$

$$0814239^2 + 862000^2 = \mathbf{1}\,185761^2$$
$$\mathbf{12}\,0814239^2 + 9482000^2 = \mathbf{121}\,185761^2$$
$$\mathbf{1232}\,0814239^2 + 95682000^2 = \mathbf{12321}\,185761^2$$
$$\mathbf{123432}\,0814239^2 + 957682000^2 = \mathbf{1234321}\,185761^2 \quad (5.431)$$

$$0813376^2 + 864000^2 = \mathbf{1}\,186624^2$$
$$\mathbf{12}\,0813376^2 + 9504000^2 = \mathbf{121}\,186624^2$$
$$\mathbf{1232}\,0813376^2 + 95904000^2 = \mathbf{12321}\,186624^2$$
$$\mathbf{123432}\,0813376^2 + 959904000^2 = \mathbf{1234321}\,186624^2 \quad (5.432)$$

$$0812511^2 + 866000^2 = \mathbf{1}\,187489^2$$
$$\mathbf{12}\,0812511^2 + 9526000^2 = \mathbf{121}\,187489^2$$
$$\mathbf{1232}\,0812511^2 + 96126000^2 = \mathbf{12321}\,187489^2$$
$$\mathbf{123432}\,0812511^2 + 962126000^2 = \mathbf{1234321}\,187489^2 \quad (5.433)$$

$$0811644^2 + 868000^2 = \mathbf{1}\,188356^2$$
$$\mathbf{12}\,0811644^2 + 9548000^2 = \mathbf{121}\,188356^2$$
$$\mathbf{1232}\,0811644^2 + 96348000^2 = \mathbf{12321}\,188356^2$$
$$\mathbf{123432}\,0811644^2 + 964348000^2 = \mathbf{1234321}\,188356^2 \quad (5.434)$$

$$0810775^2 + 870000^2 = \mathbf{1}\,189225^2$$
$$\mathbf{12}\,0810775^2 + 9570000^2 = \mathbf{121}\,189225^2$$
$$\mathbf{1232}\,0810775^2 + 96570000^2 = \mathbf{12321}\,189225^2$$
$$\mathbf{123432}\,0810775^2 + 966570000^2 = \mathbf{1234321}\,189225^2 \quad (5.435)$$

$$0809904^2 + 872000^2 = \mathbf{1}\,190096^2$$
$$\mathbf{12}\,0809904^2 + 9592000^2 = \mathbf{121}\,190096^2$$
$$\mathbf{1232}\,0809904^2 + 96792000^2 = \mathbf{12321}\,190096^2$$
$$\mathbf{123432}\,0809904^2 + 968792000^2 = \mathbf{1234321}\,190096^2 \quad (5.436)$$

$$0809031^2 + 874000^2 = \mathbf{1}\,190969^2$$
$$\mathbf{12}\,0809031^2 + 9614000^2 = \mathbf{121}\,190969^2$$
$$\mathbf{1232}\,0809031^2 + 97014000^2 = \mathbf{12321}\,190969^2$$
$$\mathbf{123432}\,0809031^2 + 971014000^2 = \mathbf{1234321}\,190969^2 \quad (5.437)$$

$$0808156^2 + 876000^2 = \mathbf{1}\,191844^2$$
$$\mathbf{12}\,0808156^2 + 9636000^2 = \mathbf{121}\,191844^2$$
$$\mathbf{1232}\,0808156^2 + 97236000^2 = \mathbf{12321}\,191844^2$$
$$\mathbf{123432}\,0808156^2 + 973236000^2 = \mathbf{1234321}\,191844^2 \quad (5.438)$$

$$0807279^2 + 878000^2 = \mathbf{1}\,192721^2$$
$$\mathbf{12}\,0807279^2 + 9658000^2 = \mathbf{121}\,192721^2$$
$$\mathbf{1232}\,0807279^2 + 97458000^2 = \mathbf{12321}\,192721^2$$
$$\mathbf{123432}\,0807279^2 + 975458000^2 = \mathbf{1234321}\,192721^2 \quad (5.439)$$

$$0806400^2 + 880000^2 = \mathbf{1}\,193600^2$$
$$\mathbf{12}\,0806400^2 + 9680000^2 = \mathbf{121}\,193600^2$$
$$\mathbf{1232}\,0806400^2 + 97680000^2 = \mathbf{12321}\,193600^2$$
$$\mathbf{123432}\,0806400^2 + 977680000^2 = \mathbf{1234321}\,193600^2 \quad (5.440)$$

$$0805519^2 + 882000^2 = \mathbf{1}\,194481^2$$
$$\mathbf{12}\,0805519^2 + 9702000^2 = \mathbf{121}\,194481^2$$
$$\mathbf{1232}\,0805519^2 + 97902000^2 = \mathbf{12321}\,194481^2$$
$$\mathbf{123432}\,0805519^2 + 979902000^2 = \mathbf{1234321}\,194481^2 \quad (5.441)$$

$$0804636^2 + 884000^2 = \mathbf{1}\,195364^2$$
$$\mathbf{12}\,0804636^2 + 9724000^2 = \mathbf{121}\,195364^2$$
$$\mathbf{1232}\,0804636^2 + 98124000^2 = \mathbf{12321}\,195364^2$$
$$\mathbf{123432}\,0804636^2 + 982124000^2 = \mathbf{1234321}\,195364^2 \quad (5.442)$$

$$0803751^2 + 886000^2 = \mathbf{1}\,196249^2$$
$$\mathbf{12}\,0803751^2 + 9746000^2 = \mathbf{121}\,196249^2$$
$$\mathbf{1232}\,0803751^2 + 98346000^2 = \mathbf{12321}\,196249^2$$
$$\mathbf{123432}\,0803751^2 + 984346000^2 = \mathbf{1234321}\,196249^2 \quad (5.443)$$

$$0802864^2 + 888000^2 = \mathbf{1}\,197136^2$$
$$\mathbf{12}\,0802864^2 + 9768000^2 = \mathbf{121}\,197136^2$$
$$\mathbf{1232}\,0802864^2 + 98568000^2 = \mathbf{12321}\,197136^2$$
$$\mathbf{123432}\,0802864^2 + 986568000^2 = \mathbf{1234321}\,197136^2 \quad (5.444)$$

$$0801975^2 + 890000^2 = \mathbf{1}\,198025^2$$
$$\mathbf{12}\,0801975^2 + 9790000^2 = \mathbf{121}\,198025^2$$
$$\mathbf{1232}\,0801975^2 + 98790000^2 = \mathbf{12321}\,198025^2$$
$$\mathbf{123432}\,0801975^2 + 988790000^2 = \mathbf{1234321}\,198025^2 \quad (5.445)$$

$$0801084^2 + 892000^2 = \mathbf{1}\,198916^2$$
$$\mathbf{12}\,0801084^2 + 9812000^2 = \mathbf{121}\,198916^2$$
$$\mathbf{1232}\,0801084^2 + 99012000^2 = \mathbf{12321}\,198916^2$$
$$\mathbf{123432}\,0801084^2 + 991012000^2 = \mathbf{1234321}\,198916^2 \quad (5.446)$$

$$0800191^2 + 894000^2 = \mathbf{1}\,199809^2$$
$$\mathbf{12}\,0800191^2 + 9834000^2 = \mathbf{121}\,199809^2$$
$$\mathbf{1232}\,0800191^2 + 99234000^2 = \mathbf{12321}\,199809^2$$
$$\mathbf{123432}\,0800191^2 + 993234000^2 = \mathbf{1234321}\,199809^2 \quad (5.447)$$

$$0799296^2 + 896000^2 = \mathbf{1}\,200704^2$$
$$\mathbf{12}\,0799296^2 + 9856000^2 = \mathbf{121}\,200704^2$$
$$\mathbf{1232}\,0799296^2 + 99456000^2 = \mathbf{12321}\,200704^2$$
$$\mathbf{123432}\,0799296^2 + 995456000^2 = \mathbf{1234321}\,200704^2 \quad (5.448)$$

$$0798399^2 + 898000^2 = \mathbf{1}\,201601^2$$
$$\mathbf{12}\,0798399^2 + 9878000^2 = \mathbf{121}\,201601^2$$
$$\mathbf{1232}\,0798399^2 + 99678000^2 = \mathbf{12321}\,201601^2$$
$$\mathbf{123432}\,0798399^2 + 997678000^2 = \mathbf{1234321}\,201601^2 \quad (5.449)$$

$$0797500^2 + 900000^2 = \mathbf{1}\,202500^2$$
$$\mathbf{12}\,0797500^2 + 9900000^2 = \mathbf{121}\,202500^2$$
$$\mathbf{1232}\,0797500^2 + 99900000^2 = \mathbf{12321}\,202500^2$$
$$\mathbf{123432}\,0797500^2 + 999900000^2 = \mathbf{1234321}\,202500^2 \quad (5.450)$$

$$0796599^2 + 902000^2 = \mathbf{1}\,203401^2$$
$$\mathbf{12}\,0796599^2 + 9922000^2 = \mathbf{121}\,203401^2$$
$$\mathbf{1232}\,0796599^2 + 100122000^2 = \mathbf{12321}\,203401^2$$
$$\mathbf{123432}\,0796599^2 + 1002122000^2 = \mathbf{1234321}\,203401^2 \quad (5.451)$$

$$0795696^2 + 904000^2 = \mathbf{1}\,204304^2$$
$$\mathbf{12}\,0795696^2 + 9944000^2 = \mathbf{121}\,204304^2$$
$$\mathbf{1232}\,0795696^2 + 100344000^2 = \mathbf{12321}\,204304^2$$
$$\mathbf{123432}\,0795696^2 + 1004344000^2 = \mathbf{1234321}\,204304^2 \quad (5.452)$$

$$0794791^2 + 906000^2 = \mathbf{1}\,205209^2$$
$$\mathbf{12}\,0794791^2 + 9966000^2 = \mathbf{121}\,205209^2$$
$$\mathbf{1232}\,0794791^2 + 100566000^2 = \mathbf{12321}\,205209^2$$
$$\mathbf{123432}\,0794791^2 + 1006566000^2 = \mathbf{1234321}\,205209^2 \quad (5.453)$$

$$0793884^2 + 908000^2 = \mathbf{1}\,206116^2$$
$$\mathbf{12}\,0793884^2 + 9988000^2 = \mathbf{121}\,206116^2$$
$$\mathbf{1232}\,0793884^2 + 100788000^2 = \mathbf{12321}\,206116^2$$
$$\mathbf{123432}\,0793884^2 + 1008788000^2 = \mathbf{1234321}\,206116^2 \quad (5.454)$$

$$0792975^2 + 910000^2 = \mathbf{1}\,207025^2$$
$$\mathbf{12}\,0792975^2 + 10010000^2 = \mathbf{121}\,207025^2$$
$$\mathbf{1232}\,0792975^2 + 101010000^2 = \mathbf{12321}\,207025^2$$
$$\mathbf{123432}\,0792975^2 + 1011010000^2 = \mathbf{1234321}\,207025^2 \quad (5.455)$$

$$0792064^2 + 912000^2 = \mathbf{1}\,207936^2$$
$$\mathbf{12}\,0792064^2 + 10032000^2 = \mathbf{121}\,207936^2$$
$$\mathbf{1232}\,0792064^2 + 101232000^2 = \mathbf{12321}\,207936^2$$
$$\mathbf{123432}\,0792064^2 + 1013232000^2 = \mathbf{1234321}\,207936^2 \quad (5.456)$$

$$0791151^2 + 914000^2 = \mathbf{1}\,208849^2$$
$$\mathbf{12}\,0791151^2 + 10054000^2 = \mathbf{121}\,208849^2$$
$$\mathbf{1232}\,0791151^2 + 101454000^2 = \mathbf{12321}\,208849^2$$
$$\mathbf{123432}\,0791151^2 + 1015454000^2 = \mathbf{1234321}\,208849^2 \quad (5.457)$$

$$0790236^2 + 916000^2 = \mathbf{1}\,209764^2$$
$$\mathbf{12}\,0790236^2 + 10076000^2 = \mathbf{121}\,209764^2$$
$$\mathbf{1232}\,0790236^2 + 101676000^2 = \mathbf{12321}\,209764^2$$
$$\mathbf{123432}\,0790236^2 + 1017676000^2 = \mathbf{1234321}\,209764^2 \quad (5.458)$$

$$0789319^2 + 918000^2 = \mathbf{1}\,210681^2$$
$$\mathbf{12}\,0789319^2 + 10098000^2 = \mathbf{121}\,210681^2$$
$$\mathbf{1232}\,0789319^2 + 101898000^2 = \mathbf{12321}\,210681^2$$
$$\mathbf{123432}\,0789319^2 + 1019898000^2 = \mathbf{1234321}\,210681^2 \quad (5.459)$$

$$0788400^2 + 920000^2 = \mathbf{1}\,211600^2$$
$$\mathbf{12}\,0788400^2 + 10120000^2 = \mathbf{121}\,211600^2$$
$$\mathbf{1232}\,0788400^2 + 102120000^2 = \mathbf{12321}\,211600^2$$
$$\mathbf{123432}\,0788400^2 + 1022120000^2 = \mathbf{1234321}\,211600^2 \quad (5.460)$$

$$0787479^2 + 922000^2 = \mathbf{1}\,212521^2$$
$$\mathbf{12}\,0787479^2 + 10142000^2 = \mathbf{121}\,212521^2$$
$$\mathbf{1232}\,0787479^2 + 102342000^2 = \mathbf{12321}\,212521^2$$
$$\mathbf{123432}\,0787479^2 + 1024342000^2 = \mathbf{1234321}\,212521^2 \quad (5.461)$$

$$0786556^2 + 924000^2 = \mathbf{1}\,213444^2$$
$$\mathbf{12}\,0786556^2 + 10164000^2 = \mathbf{121}\,213444^2$$
$$\mathbf{1232}\,0786556^2 + 102564000^2 = \mathbf{12321}\,213444^2$$
$$\mathbf{123432}\,0786556^2 + 1026564000^2 = \mathbf{1234321}\,213444^2 \quad (5.462)$$

$$0785631^2 + 926000^2 = \mathbf{1}\,214369^2$$
$$\mathbf{12}\,0785631^2 + 10186000^2 = \mathbf{121}\,214369^2$$
$$\mathbf{1232}\,0785631^2 + 102786000^2 = \mathbf{12321}\,214369^2$$
$$\mathbf{123432}\,0785631^2 + 1028786000^2 = \mathbf{1234321}\,214369^2 \quad (5.463)$$

$$0784704^2 + 928000^2 = \mathbf{1}\,215296^2$$
$$\mathbf{12}\,0784704^2 + 10208000^2 = \mathbf{121}\,215296^2$$
$$\mathbf{1232}\,0784704^2 + 103008000^2 = \mathbf{12321}\,215296^2$$
$$\mathbf{123432}\,0784704^2 + 1031008000^2 = \mathbf{1234321}\,215296^2 \quad (5.464)$$

$0783775^2 + 930000^2 = \mathbf{1}\,216225^2$

$\mathbf{12}\,0783775^2 + 10230000^2 = \mathbf{121}\,216225^2$

$\mathbf{1232}\,0783775^2 + 103230000^2 = \mathbf{12321}\,216225^2$

$\mathbf{123432}\,0783775^2 + 1033230000^2 = \mathbf{1234321}\,216225^2 \quad (5.465)$

$0782844^2 + 932000^2 = \mathbf{1}\,217156^2$

$\mathbf{12}\,0782844^2 + 10252000^2 = \mathbf{121}\,217156^2$

$\mathbf{1232}\,0782844^2 + 103452000^2 = \mathbf{12321}\,217156^2$

$\mathbf{123432}\,0782844^2 + 1035452000^2 = \mathbf{1234321}\,217156^2 \quad (5.466)$

$0781911^2 + 934000^2 = \mathbf{1}\,218089^2$

$\mathbf{12}\,0781911^2 + 10274000^2 = \mathbf{121}\,218089^2$

$\mathbf{1232}\,0781911^2 + 103674000^2 = \mathbf{12321}\,218089^2$

$\mathbf{123432}\,0781911^2 + 1037674000^2 = \mathbf{1234321}\,218089^2 \quad (5.467)$

$0780976^2 + 936000^2 = \mathbf{1}\,219024^2$

$\mathbf{12}\,0780976^2 + 10296000^2 = \mathbf{121}\,219024^2$

$\mathbf{1232}\,0780976^2 + 103896000^2 = \mathbf{12321}\,219024^2$

$\mathbf{123432}\,0780976^2 + 1039896000^2 = \mathbf{1234321}\,219024^2 \quad (5.468)$

$0780039^2 + 938000^2 = \mathbf{1}\,219961^2$

$\mathbf{12}\,0780039^2 + 10318000^2 = \mathbf{121}\,219961^2$

$\mathbf{1232}\,0780039^2 + 104118000^2 = \mathbf{12321}\,219961^2$

$\mathbf{123432}\,0780039^2 + 1042118000^2 = \mathbf{1234321}\,219961^2 \quad (5.469)$

$0779100^2 + 940000^2 = \mathbf{1}\,220900^2$

$\mathbf{12}\,0779100^2 + 10340000^2 = \mathbf{121}\,220900^2$

$\mathbf{1232}\,0779100^2 + 104340000^2 = \mathbf{12321}\,220900^2$

$\mathbf{123432}\,0779100^2 + 1044340000^2 = \mathbf{1234321}\,220900^2 \quad (5.470)$

$0778159^2 + 942000^2 = \mathbf{1}\,221841^2$

$\mathbf{12}\,0778159^2 + 10362000^2 = \mathbf{121}\,221841^2$

$\mathbf{1232}\,0778159^2 + 104562000^2 = \mathbf{12321}\,221841^2$

$\mathbf{123432}\,0778159^2 + 1046562000^2 = \mathbf{1234321}\,221841^2 \quad (5.471)$

$0777216^2 + 944000^2 = \mathbf{1}\,222784^2$

$\mathbf{12}\,0777216^2 + 10384000^2 = \mathbf{121}\,222784^2$

$\mathbf{1232}\,0777216^2 + 104784000^2 = \mathbf{12321}\,222784^2$

$\mathbf{123432}\,0777216^2 + 1048784000^2 = \mathbf{1234321}\,222784^2 \quad (5.472)$

$0776271^2 + 946000^2 = \mathbf{1}\,223729^2$

$\mathbf{12}\,0776271^2 + 10406000^2 = \mathbf{121}\,223729^2$

$\mathbf{1232}\,0776271^2 + 105006000^2 = \mathbf{12321}\,223729^2$

$\mathbf{123432}\,0776271^2 + 1051006000^2 = \mathbf{1234321}\,223729^2 \quad (5.473)$

$0775324^2 + 948000^2 = \mathbf{1}\,224676^2$

$\mathbf{12}\,0775324^2 + 10428000^2 = \mathbf{121}\,224676^2$

$\mathbf{1232}\,0775324^2 + 105228000^2 = \mathbf{12321}\,224676^2$

$\mathbf{123432}\,0775324^2 + 1053228000^2 = \mathbf{1234321}\,224676^2 \quad (5.474)$

$0774375^2 + 950000^2 = \mathbf{1}\,225625^2$

$\mathbf{12}\,0774375^2 + 10450000^2 = \mathbf{121}\,225625^2$

$\mathbf{1232}\,0774375^2 + 105450000^2 = \mathbf{12321}\,225625^2$

$\mathbf{123432}\,0774375^2 + 1055450000^2 = \mathbf{1234321}\,225625^2 \quad (5.475)$

$0773424^2 + 952000^2 = \mathbf{1}\,226576^2$

$\mathbf{12}\,0773424^2 + 10472000^2 = \mathbf{121}\,226576^2$

$\mathbf{1232}\,0773424^2 + 105672000^2 = \mathbf{12321}\,226576^2$

$\mathbf{123432}\,0773424^2 + 1057672000^2 = \mathbf{1234321}\,226576^2 \quad (5.476)$

$0772471^2 + 954000^2 = \mathbf{1}\,227529^2$

$\mathbf{12}\,0772471^2 + 10494000^2 = \mathbf{121}\,227529^2$

$\mathbf{1232}\,0772471^2 + 105894000^2 = \mathbf{12321}\,227529^2$

$\mathbf{123432}\,0772471^2 + 1059894000^2 = \mathbf{1234321}\,227529^2 \quad (5.477)$

$0771516^2 + 956000^2 = \mathbf{1}\,228484^2$

$\mathbf{12}\,0771516^2 + 10516000^2 = \mathbf{121}\,228484^2$

$\mathbf{1232}\,0771516^2 + 106116000^2 = \mathbf{12321}\,228484^2$

$\mathbf{123432}\,0771516^2 + 1062116000^2 = \mathbf{1234321}\,228484^2 \quad (5.478)$

$0770559^2 + 958000^2 = \mathbf{1}\,229441^2$

$\mathbf{12}\,0770559^2 + 10538000^2 = \mathbf{121}\,229441^2$

$\mathbf{1232}\,0770559^2 + 106338000^2 = \mathbf{12321}\,229441^2$

$\mathbf{123432}\,0770559^2 + 1064338000^2 = \mathbf{1234321}\,229441^2 \quad (5.479)$

$0769600^2 + 960000^2 = \mathbf{1}\,230400^2$

$\mathbf{12}\,0769600^2 + 10560000^2 = \mathbf{121}\,230400^2$

$\mathbf{1232}\,0769600^2 + 106560000^2 = \mathbf{12321}\,230400^2$

$\mathbf{123432}\,0769600^2 + 1066560000^2 = \mathbf{1234321}\,230400^2 \quad (5.480)$

$0768639^2 + 962000^2 = \mathbf{1}\,231361^2$

$\mathbf{12}\,0768639^2 + 10582000^2 = \mathbf{121}\,231361^2$

$\mathbf{1232}\,0768639^2 + 106782000^2 = \mathbf{12321}\,231361^2$

$\mathbf{123432}\,0768639^2 + 1068782000^2 = \mathbf{1234321}\,231361^2 \quad (5.481)$

$$0767676^2 + 964000^2 = \mathbf{1}\,232324^2$$
$$\mathbf{12}\,0767676^2 + 10604000^2 = \mathbf{121}\,232324^2$$
$$\mathbf{1232}\,0767676^2 + 107004000^2 = \mathbf{12321}\,232324^2$$
$$\mathbf{123432}\,0767676^2 + 1071004000^2 = \mathbf{1234321}\,232324^2 \quad (5.482)$$

$$0758919^2 + 982000^2 = \mathbf{1}\,241081^2$$
$$\mathbf{12}\,0758919^2 + 10802000^2 = \mathbf{121}\,241081^2$$
$$\mathbf{1232}\,0758919^2 + 109002000^2 = \mathbf{12321}\,241081^2$$
$$\mathbf{123432}\,0758919^2 + 1091002000^2 = \mathbf{1234321}\,241081^2 \quad (5.491)$$

$$0766711^2 + 966000^2 = \mathbf{1}\,233289^2$$
$$\mathbf{12}\,0766711^2 + 10626000^2 = \mathbf{121}\,233289^2$$
$$\mathbf{1232}\,0766711^2 + 107226000^2 = \mathbf{12321}\,233289^2$$
$$\mathbf{123432}\,0766711^2 + 1073226000^2 = \mathbf{1234321}\,233289^2 \quad (5.483)$$

$$0757936^2 + 984000^2 = \mathbf{1}\,242064^2$$
$$\mathbf{12}\,0757936^2 + 10824000^2 = \mathbf{121}\,242064^2$$
$$\mathbf{1232}\,0757936^2 + 109224000^2 = \mathbf{12321}\,242064^2$$
$$\mathbf{123432}\,0757936^2 + 1093224000^2 = \mathbf{1234321}\,242064^2 \quad (5.492)$$

$$0765744^2 + 968000^2 = \mathbf{1}\,234256^2$$
$$\mathbf{12}\,0765744^2 + 10648000^2 = \mathbf{121}\,234256^2$$
$$\mathbf{1232}\,0765744^2 + 107448000^2 = \mathbf{12321}\,234256^2$$
$$\mathbf{123432}\,0765744^2 + 1075448000^2 = \mathbf{1234321}\,234256^2 \quad (5.484)$$

$$0756951^2 + 986000^2 = \mathbf{1}\,243049^2$$
$$\mathbf{12}\,0756951^2 + 10846000^2 = \mathbf{121}\,243049^2$$
$$\mathbf{1232}\,0756951^2 + 109446000^2 = \mathbf{12321}\,243049^2$$
$$\mathbf{123432}\,0756951^2 + 1095446000^2 = \mathbf{1234321}\,243049^2 \quad (5.493)$$

$$0764775^2 + 970000^2 = \mathbf{1}\,235225^2$$
$$\mathbf{12}\,0764775^2 + 10670000^2 = \mathbf{121}\,235225^2$$
$$\mathbf{1232}\,0764775^2 + 107670000^2 = \mathbf{12321}\,235225^2$$
$$\mathbf{123432}\,0764775^2 + 1077670000^2 = \mathbf{1234321}\,235225^2 \quad (5.485)$$

$$0755964^2 + 988000^2 = \mathbf{1}\,244036^2$$
$$\mathbf{12}\,0755964^2 + 10868000^2 = \mathbf{121}\,244036^2$$
$$\mathbf{1232}\,0755964^2 + 109668000^2 = \mathbf{12321}\,244036^2$$
$$\mathbf{123432}\,0755964^2 + 1097668000^2 = \mathbf{1234321}\,244036^2 \quad (5.494)$$

$$0763804^2 + 972000^2 = \mathbf{1}\,236196^2$$
$$\mathbf{12}\,0763804^2 + 10692000^2 = \mathbf{121}\,236196^2$$
$$\mathbf{1232}\,0763804^2 + 107892000^2 = \mathbf{12321}\,236196^2$$
$$\mathbf{123432}\,0763804^2 + 1079892000^2 = \mathbf{1234321}\,236196^2 \quad (5.486)$$

$$0754975^2 + 990000^2 = \mathbf{1}\,245025^2$$
$$\mathbf{12}\,0754975^2 + 10890000^2 = \mathbf{121}\,245025^2$$
$$\mathbf{1232}\,0754975^2 + 109890000^2 = \mathbf{12321}\,245025^2$$
$$\mathbf{123432}\,0754975^2 + 1099890000^2 = \mathbf{1234321}\,245025^2 \quad (5.495)$$

$$0762831^2 + 974000^2 = \mathbf{1}\,237169^2$$
$$\mathbf{12}\,0762831^2 + 10714000^2 = \mathbf{121}\,237169^2$$
$$\mathbf{1232}\,0762831^2 + 108114000^2 = \mathbf{12321}\,237169^2$$
$$\mathbf{123432}\,0762831^2 + 1082114000^2 = \mathbf{1234321}\,237169^2 \quad (5.487)$$

$$0753984^2 + 992000^2 = \mathbf{1}\,246016^2$$
$$\mathbf{12}\,0753984^2 + 10912000^2 = \mathbf{121}\,246016^2$$
$$\mathbf{1232}\,0753984^2 + 110112000^2 = \mathbf{12321}\,246016^2$$
$$\mathbf{123432}\,0753984^2 + 1102112000^2 = \mathbf{1234321}\,246016^2 \quad (5.496)$$

$$0761856^2 + 976000^2 = \mathbf{1}\,238144^2$$
$$\mathbf{12}\,0761856^2 + 10736000^2 = \mathbf{121}\,238144^2$$
$$\mathbf{1232}\,0761856^2 + 108336000^2 = \mathbf{12321}\,238144^2$$
$$\mathbf{123432}\,0761856^2 + 1084336000^2 = \mathbf{1234321}\,238144^2 \quad (5.488)$$

$$0752991^2 + 994000^2 = \mathbf{1}\,247009^2$$
$$\mathbf{12}\,0752991^2 + 10934000^2 = \mathbf{121}\,247009^2$$
$$\mathbf{1232}\,0752991^2 + 110334000^2 = \mathbf{12321}\,247009^2$$
$$\mathbf{123432}\,0752991^2 + 1104334000^2 = \mathbf{1234321}\,247009^2 \quad (5.497)$$

$$0760879^2 + 978000^2 = \mathbf{1}\,239121^2$$
$$\mathbf{12}\,0760879^2 + 10758000^2 = \mathbf{121}\,239121^2$$
$$\mathbf{1232}\,0760879^2 + 108558000^2 = \mathbf{12321}\,239121^2$$
$$\mathbf{123432}\,0760879^2 + 1086558000^2 = \mathbf{1234321}\,239121^2 \quad (5.489)$$

$$0751996^2 + 996000^2 = \mathbf{1}\,248004^2$$
$$\mathbf{12}\,0751996^2 + 10956000^2 = \mathbf{121}\,248004^2$$
$$\mathbf{1232}\,0751996^2 + 110556000^2 = \mathbf{12321}\,248004^2$$
$$\mathbf{123432}\,0751996^2 + 1106556000^2 = \mathbf{1234321}\,248004^2 \quad (5.498)$$

$$0759900^2 + 980000^2 = \mathbf{1}\,240100^2$$
$$\mathbf{12}\,0759900^2 + 10780000^2 = \mathbf{121}\,240100^2$$
$$\mathbf{1232}\,0759900^2 + 108780000^2 = \mathbf{12321}\,240100^2$$
$$\mathbf{123432}\,0759900^2 + 1088780000^2 = \mathbf{1234321}\,240100^2 \quad (5.490)$$

$$0750999^2 + 998000^2 = \mathbf{1}\,249001^2$$
$$\mathbf{12}\,0750999^2 + 10978000^2 = \mathbf{121}\,249001^2$$
$$\mathbf{1232}\,0750999^2 + 110778000^2 = \mathbf{12321}\,249001^2$$
$$\mathbf{123432}\,0750999^2 + 1108778000^2 = \mathbf{1234321}\,249001^2 \quad (5.499)$$

5.6   For $n = 500, \ 501, \ 501, \ ..., 597, \ 598, \ 599$:

Let's consider

$m = 1000, \ 11000, \ 111000, \ 1111000, \ 11111000, \ 111111000, \ 1111111000, \ 11111111000, \ 111111111000$

in (1.1), then for each value of $n = 500, \ 501, \ 501, \ ..., 597, \ 598, \ 599$; there are 100 *palindromic-type pandigital Pythagorean patterns* given below. In each case, only first four values are written. The other 5 values can be written on similar lines as done in subsection 5.1.

$$0750000^2 + 1000000^2 \quad = \mathbf{1}\,250000^2$$
$$\mathbf{12}\,0750000^2 + 11000000^2 \quad = \mathbf{121}\,250000^2$$
$$\mathbf{1232}\,0750000^2 + 111000000^2 \ = \mathbf{12321}\,250000^2$$
$$\mathbf{123432}\,0750000^2 + 1111000000^2 = \mathbf{1234321}\,250000^2 \quad (5.500)$$

$$0748999^2 + 1002000^2 \quad = \mathbf{1}\,251001^2$$
$$\mathbf{12}\,0748999^2 + 11022000^2 \quad = \mathbf{121}\,251001^2$$
$$\mathbf{1232}\,0748999^2 + 111222000^2 \ = \mathbf{12321}\,251001^2$$
$$\mathbf{123432}\,0748999^2 + 1113222000^2 = \mathbf{1234321}\,251001^2 \quad (5.501)$$

$$0747996^2 + 1004000^2 \quad = \mathbf{1}\,252004^2$$
$$\mathbf{12}\,0747996^2 + 11044000^2 \quad = \mathbf{121}\,252004^2$$
$$\mathbf{1232}\,0747996^2 + 111444000^2 \ = \mathbf{12321}\,252004^2$$
$$\mathbf{123432}\,0747996^2 + 1115444000^2 = \mathbf{1234321}\,252004^2 \quad (5.502)$$

$$0746991^2 + 1006000^2 \quad = \mathbf{1}\,253009^2$$
$$\mathbf{12}\,0746991^2 + 11066000^2 \quad = \mathbf{121}\,253009^2$$
$$\mathbf{1232}\,0746991^2 + 111666000^2 \ = \mathbf{12321}\,253009^2$$
$$\mathbf{123432}\,0746991^2 + 1117666000^2 = \mathbf{1234321}\,253009^2 \quad (5.503)$$

$$0745984^2 + 1008000^2 \quad = \mathbf{1}\,254016^2$$
$$\mathbf{12}\,0745984^2 + 11088000^2 \quad = \mathbf{121}\,254016^2$$
$$\mathbf{1232}\,0745984^2 + 111888000^2 \ = \mathbf{12321}\,254016^2$$
$$\mathbf{123432}\,0745984^2 + 1119888000^2 = \mathbf{1234321}\,254016^2 \quad (5.504)$$

$$0744975^2 + 1010000^2 \quad = \mathbf{1}\,255025^2$$
$$\mathbf{12}\,0744975^2 + 11110000^2 \quad = \mathbf{121}\,255025^2$$
$$\mathbf{1232}\,0744975^2 + 112110000^2 \ = \mathbf{12321}\,255025^2$$
$$\mathbf{123432}\,0744975^2 + 1122110000^2 = \mathbf{1234321}\,255025^2 \quad (5.505)$$

$$0743964^2 + 1012000^2 \quad = \mathbf{1}\,256036^2$$
$$\mathbf{12}\,0743964^2 + 11132000^2 \quad = \mathbf{121}\,256036^2$$
$$\mathbf{1232}\,0743964^2 + 112332000^2 \ = \mathbf{12321}\,256036^2$$
$$\mathbf{123432}\,0743964^2 + 1124332000^2 = \mathbf{1234321}\,256036^2 \quad (5.506)$$

$$0742951^2 + 1014000^2 \quad = \mathbf{1}\,257049^2$$
$$\mathbf{12}\,0742951^2 + 11154000^2 \quad = \mathbf{121}\,257049^2$$
$$\mathbf{1232}\,0742951^2 + 112554000^2 \ = \mathbf{12321}\,257049^2$$
$$\mathbf{123432}\,0742951^2 + 1126554000^2 = \mathbf{1234321}\,257049^2 \quad (5.507)$$

$$0741936^2 + 1016000^2 \quad = \mathbf{1}\,258064^2$$
$$\mathbf{12}\,0741936^2 + 11176000^2 \quad = \mathbf{121}\,258064^2$$
$$\mathbf{1232}\,0741936^2 + 112776000^2 \ = \mathbf{12321}\,258064^2$$
$$\mathbf{123432}\,0741936^2 + 1128776000^2 = \mathbf{1234321}\,258064^2 \quad (5.508)$$

$$0740919^2 + 1018000^2 \quad = \mathbf{1}\,259081^2$$
$$\mathbf{12}\,0740919^2 + 11198000^2 \quad = \mathbf{121}\,259081^2$$
$$\mathbf{1232}\,0740919^2 + 112998000^2 \ = \mathbf{12321}\,259081^2$$
$$\mathbf{123432}\,0740919^2 + 1130998000^2 = \mathbf{1234321}\,259081^2 \quad (5.509)$$

$$0739900^2 + 1020000^2 \quad = \mathbf{1}\,260100^2$$
$$\mathbf{12}\,0739900^2 + 11220000^2 \quad = \mathbf{121}\,260100^2$$
$$\mathbf{1232}\,0739900^2 + 113220000^2 \ = \mathbf{12321}\,260100^2$$
$$\mathbf{123432}\,0739900^2 + 1133220000^2 = \mathbf{1234321}\,260100^2 \quad (5.510)$$

$$0738879^2 + 1022000^2 \quad = \mathbf{1}\,261121^2$$
$$\mathbf{12}\,0738879^2 + 11242000^2 \quad = \mathbf{121}\,261121^2$$
$$\mathbf{1232}\,0738879^2 + 113442000^2 \ = \mathbf{12321}\,261121^2$$
$$\mathbf{123432}\,0738879^2 + 1135442000^2 = \mathbf{1234321}\,261121^2 \quad (5.511)$$

$$0737856^2 + 1024000^2 \quad = \mathbf{1}\,262144^2$$
$$\mathbf{12}\,0737856^2 + 11264000^2 \quad = \mathbf{121}\,262144^2$$
$$\mathbf{1232}\,0737856^2 + 113664000^2 \ = \mathbf{12321}\,262144^2$$
$$\mathbf{123432}\,0737856^2 + 1137664000^2 = \mathbf{1234321}\,262144^2 \quad (5.512)$$

$$0736831^2 + 1026000^2 \quad = \mathbf{1}\,263169^2$$
$$\mathbf{12}\,0736831^2 + 11286000^2 \quad = \mathbf{121}\,263169^2$$
$$\mathbf{1232}\,0736831^2 + 113886000^2 \ = \mathbf{12321}\,263169^2$$
$$\mathbf{123432}\,0736831^2 + 1139886000^2 = \mathbf{1234321}\,263169^2 \quad (5.513)$$

$$0735804^2 + 1028000^2 = \mathbf{1}\,264196^2$$
$$\mathbf{12}\,0735804^2 + 11308000^2 = \mathbf{121}\,264196^2$$
$$\mathbf{1232}\,0735804^2 + 114108000^2 = \mathbf{12321}\,264196^2$$
$$\mathbf{123432}\,0735804^2 + 1142108000^2 = \mathbf{1234321}\,264196^2 \quad (5.514)$$

$$0734775^2 + 1030000^2 = \mathbf{1}\,265225^2$$
$$\mathbf{12}\,0734775^2 + 11330000^2 = \mathbf{121}\,265225^2$$
$$\mathbf{1232}\,0734775^2 + 114330000^2 = \mathbf{12321}\,265225^2$$
$$\mathbf{123432}\,0734775^2 + 1144330000^2 = \mathbf{1234321}\,265225^2 \quad (5.515)$$

$$0733744^2 + 1032000^2 = \mathbf{1}\,266256^2$$
$$\mathbf{12}\,0733744^2 + 11352000^2 = \mathbf{121}\,266256^2$$
$$\mathbf{1232}\,0733744^2 + 114552000^2 = \mathbf{12321}\,266256^2$$
$$\mathbf{123432}\,0733744^2 + 1146552000^2 = \mathbf{1234321}\,266256^2 \quad (5.516)$$

$$0732711^2 + 1034000^2 = \mathbf{1}\,267289^2$$
$$\mathbf{12}\,0732711^2 + 11374000^2 = \mathbf{121}\,267289^2$$
$$\mathbf{1232}\,0732711^2 + 114774000^2 = \mathbf{12321}\,267289^2$$
$$\mathbf{123432}\,0732711^2 + 1148774000^2 = \mathbf{1234321}\,267289^2 \quad (5.517)$$

$$0731676^2 + 1036000^2 = \mathbf{1}\,268324^2$$
$$\mathbf{12}\,0731676^2 + 11396000^2 = \mathbf{121}\,268324^2$$
$$\mathbf{1232}\,0731676^2 + 114996000^2 = \mathbf{12321}\,268324^2$$
$$\mathbf{123432}\,0731676^2 + 1150996000^2 = \mathbf{1234321}\,268324^2 \quad (5.518)$$

$$0730639^2 + 1038000^2 = \mathbf{1}\,269361^2$$
$$\mathbf{12}\,0730639^2 + 11418000^2 = \mathbf{121}\,269361^2$$
$$\mathbf{1232}\,0730639^2 + 115218000^2 = \mathbf{12321}\,269361^2$$
$$\mathbf{123432}\,0730639^2 + 1153218000^2 = \mathbf{1234321}\,269361^2 \quad (5.519)$$

$$0729600^2 + 1040000^2 = \mathbf{1}\,270400^2$$
$$\mathbf{12}\,0729600^2 + 11440000^2 = \mathbf{121}\,270400^2$$
$$\mathbf{1232}\,0729600^2 + 115440000^2 = \mathbf{12321}\,270400^2$$
$$\mathbf{123432}\,0729600^2 + 1155440000^2 = \mathbf{1234321}\,270400^2 \quad (5.520)$$

$$0728559^2 + 1042000^2 = \mathbf{1}\,271441^2$$
$$\mathbf{12}\,0728559^2 + 11462000^2 = \mathbf{121}\,271441^2$$
$$\mathbf{1232}\,0728559^2 + 115662000^2 = \mathbf{12321}\,271441^2$$
$$\mathbf{123432}\,0728559^2 + 1157662000^2 = \mathbf{1234321}\,271441^2 \quad (5.521)$$

$$0727516^2 + 1044000^2 = \mathbf{1}\,272484^2$$
$$\mathbf{12}\,0727516^2 + 11484000^2 = \mathbf{121}\,272484^2$$
$$\mathbf{1232}\,0727516^2 + 115884000^2 = \mathbf{12321}\,272484^2$$
$$\mathbf{123432}\,0727516^2 + 1159884000^2 = \mathbf{1234321}\,272484^2 \quad (5.522)$$

$$0726471^2 + 1046000^2 = \mathbf{1}\,273529^2$$
$$\mathbf{12}\,0726471^2 + 11506000^2 = \mathbf{121}\,273529^2$$
$$\mathbf{1232}\,0726471^2 + 116106000^2 = \mathbf{12321}\,273529^2$$
$$\mathbf{123432}\,0726471^2 + 1162106000^2 = \mathbf{1234321}\,273529^2 \quad (5.523)$$

$$0725424^2 + 1048000^2 = \mathbf{1}\,274576^2$$
$$\mathbf{12}\,0725424^2 + 11528000^2 = \mathbf{121}\,274576^2$$
$$\mathbf{1232}\,0725424^2 + 116328000^2 = \mathbf{12321}\,274576^2$$
$$\mathbf{123432}\,0725424^2 + 1164328000^2 = \mathbf{1234321}\,274576^2 \quad (5.524)$$

$$0724375^2 + 1050000^2 = \mathbf{1}\,275625^2$$
$$\mathbf{12}\,0724375^2 + 11550000^2 = \mathbf{121}\,275625^2$$
$$\mathbf{1232}\,0724375^2 + 116550000^2 = \mathbf{12321}\,275625^2$$
$$\mathbf{123432}\,0724375^2 + 1166550000^2 = \mathbf{1234321}\,275625^2 \quad (5.525)$$

$$0723324^2 + 1052000^2 = \mathbf{1}\,276676^2$$
$$\mathbf{12}\,0723324^2 + 11572000^2 = \mathbf{121}\,276676^2$$
$$\mathbf{1232}\,0723324^2 + 116772000^2 = \mathbf{12321}\,276676^2$$
$$\mathbf{123432}\,0723324^2 + 1168772000^2 = \mathbf{1234321}\,276676^2 \quad (5.526)$$

$$0722271^2 + 1054000^2 = \mathbf{1}\,277729^2$$
$$\mathbf{12}\,0722271^2 + 11594000^2 = \mathbf{121}\,277729^2$$
$$\mathbf{1232}\,0722271^2 + 116994000^2 = \mathbf{12321}\,277729^2$$
$$\mathbf{123432}\,0722271^2 + 1170994000^2 = \mathbf{1234321}\,277729^2 \quad (5.527)$$

$$0721216^2 + 1056000^2 = \mathbf{1}\,278784^2$$
$$\mathbf{12}\,0721216^2 + 11616000^2 = \mathbf{121}\,278784^2$$
$$\mathbf{1232}\,0721216^2 + 117216000^2 = \mathbf{12321}\,278784^2$$
$$\mathbf{123432}\,0721216^2 + 1173216000^2 = \mathbf{1234321}\,278784^2 \quad (5.528)$$

$$0720159^2 + 1058000^2 = \mathbf{1}\,279841^2$$
$$\mathbf{12}\,0720159^2 + 11638000^2 = \mathbf{121}\,279841^2$$
$$\mathbf{1232}\,0720159^2 + 117438000^2 = \mathbf{12321}\,279841^2$$
$$\mathbf{123432}\,0720159^2 + 1175438000^2 = \mathbf{1234321}\,279841^2 \quad (5.529)$$

$$0719100^2 + 1060000^2 = \mathbf{1}\,280900^2$$
$$\mathbf{12}\,0719100^2 + 11660000^2 = \mathbf{121}\,280900^2$$
$$\mathbf{1232}\,0719100^2 + 117660000^2 = \mathbf{12321}\,280900^2$$
$$\mathbf{123432}\,0719100^2 + 1177660000^2 = \mathbf{1234321}\,280900^2 \quad (5.530)$$

$$0718039^2 + 1062000^2 = \mathbf{1}281961^2$$
$$\mathbf{12}0718039^2 + 11682000^2 = \mathbf{121}281961^2$$
$$\mathbf{1232}0718039^2 + 117882000^2 = \mathbf{12321}281961^2$$
$$\mathbf{123432}0718039^2 + 1179882000^2 = \mathbf{1234321}281961^2 \quad (5.531)$$

$$0716976^2 + 1064000^2 = \mathbf{1}283024^2$$
$$\mathbf{12}0716976^2 + 11704000^2 = \mathbf{121}283024^2$$
$$\mathbf{1232}0716976^2 + 118104000^2 = \mathbf{12321}283024^2$$
$$\mathbf{123432}0716976^2 + 1182104000^2 = \mathbf{1234321}283024^2 \quad (5.532)$$

$$0715911^2 + 1066000^2 = \mathbf{1}284089^2$$
$$\mathbf{12}0715911^2 + 11726000^2 = \mathbf{121}284089^2$$
$$\mathbf{1232}0715911^2 + 118326000^2 = \mathbf{12321}284089^2$$
$$\mathbf{123432}0715911^2 + 1184326000^2 = \mathbf{1234321}284089^2 \quad (5.533)$$

$$0714844^2 + 1068000^2 = \mathbf{1}285156^2$$
$$\mathbf{12}0714844^2 + 11748000^2 = \mathbf{121}285156^2$$
$$\mathbf{1232}0714844^2 + 118548000^2 = \mathbf{12321}285156^2$$
$$\mathbf{123432}0714844^2 + 1186548000^2 = \mathbf{1234321}285156^2 \quad (5.534)$$

$$0713775^2 + 1070000^2 = \mathbf{1}286225^2$$
$$\mathbf{12}0713775^2 + 11770000^2 = \mathbf{121}286225^2$$
$$\mathbf{1232}0713775^2 + 118770000^2 = \mathbf{12321}286225^2$$
$$\mathbf{123432}0713775^2 + 1188770000^2 = \mathbf{1234321}286225^2 \quad (5.535)$$

$$0712704^2 + 1072000^2 = \mathbf{1}287296^2$$
$$\mathbf{12}0712704^2 + 11792000^2 = \mathbf{121}287296^2$$
$$\mathbf{1232}0712704^2 + 118992000^2 = \mathbf{12321}287296^2$$
$$\mathbf{123432}0712704^2 + 1190992000^2 = \mathbf{1234321}287296^2 \quad (5.536)$$

$$0711631^2 + 1074000^2 = \mathbf{1}288369^2$$
$$\mathbf{12}0711631^2 + 11814000^2 = \mathbf{121}288369^2$$
$$\mathbf{1232}0711631^2 + 119214000^2 = \mathbf{12321}288369^2$$
$$\mathbf{123432}0711631^2 + 1193214000^2 = \mathbf{1234321}288369^2 \quad (5.537)$$

$$0710556^2 + 1076000^2 = \mathbf{1}289444^2$$
$$\mathbf{12}0710556^2 + 11836000^2 = \mathbf{121}289444^2$$
$$\mathbf{1232}0710556^2 + 119436000^2 = \mathbf{12321}289444^2$$
$$\mathbf{123432}0710556^2 + 1195436000^2 = \mathbf{1234321}289444^2 \quad (5.538)$$

$$0709479^2 + 1078000^2 = \mathbf{1}290521^2$$
$$\mathbf{12}0709479^2 + 11858000^2 = \mathbf{121}290521^2$$
$$\mathbf{1232}0709479^2 + 119658000^2 = \mathbf{12321}290521^2$$
$$\mathbf{123432}0709479^2 + 1197658000^2 = \mathbf{1234321}290521^2 \quad (5.539)$$

$$0708400^2 + 1080000^2 = \mathbf{1}291600^2$$
$$\mathbf{12}0708400^2 + 11880000^2 = \mathbf{121}291600^2$$
$$\mathbf{1232}0708400^2 + 119880000^2 = \mathbf{12321}291600^2$$
$$\mathbf{123432}0708400^2 + 1199880000^2 = \mathbf{1234321}291600^2 \quad (5.540)$$

$$0707319^2 + 1082000^2 = \mathbf{1}292681^2$$
$$\mathbf{12}0707319^2 + 11902000^2 = \mathbf{121}292681^2$$
$$\mathbf{1232}0707319^2 + 120102000^2 = \mathbf{12321}292681^2$$
$$\mathbf{123432}0707319^2 + 1202102000^2 = \mathbf{1234321}292681^2 \quad (5.541)$$

$$0706236^2 + 1084000^2 = \mathbf{1}293764^2$$
$$\mathbf{12}0706236^2 + 11924000^2 = \mathbf{121}293764^2$$
$$\mathbf{1232}0706236^2 + 120324000^2 = \mathbf{12321}293764^2$$
$$\mathbf{123432}0706236^2 + 1204324000^2 = \mathbf{1234321}293764^2 \quad (5.542)$$

$$0705151^2 + 1086000^2 = \mathbf{1}294849^2$$
$$\mathbf{12}0705151^2 + 11946000^2 = \mathbf{121}294849^2$$
$$\mathbf{1232}0705151^2 + 120546000^2 = \mathbf{12321}294849^2$$
$$\mathbf{123432}0705151^2 + 1206546000^2 = \mathbf{1234321}294849^2 \quad (5.543)$$

$$0704064^2 + 1088000^2 = \mathbf{1}295936^2$$
$$\mathbf{12}0704064^2 + 11968000^2 = \mathbf{121}295936^2$$
$$\mathbf{1232}0704064^2 + 120768000^2 = \mathbf{12321}295936^2$$
$$\mathbf{123432}0704064^2 + 1208768000^2 = \mathbf{1234321}295936^2 \quad (5.544)$$

$$0702975^2 + 1090000^2 = \mathbf{1}297025^2$$
$$\mathbf{12}0702975^2 + 11990000^2 = \mathbf{121}297025^2$$
$$\mathbf{1232}0702975^2 + 120990000^2 = \mathbf{12321}297025^2$$
$$\mathbf{123432}0702975^2 + 1210990000^2 = \mathbf{1234321}297025^2 \quad (5.545)$$

$$0701884^2 + 1092000^2 = \mathbf{1}298116^2$$
$$\mathbf{12}0701884^2 + 12012000^2 = \mathbf{121}298116^2$$
$$\mathbf{1232}0701884^2 + 121212000^2 = \mathbf{12321}298116^2$$
$$\mathbf{123432}0701884^2 + 1213212000^2 = \mathbf{1234321}298116^2 \quad (5.546)$$

$$0700791^2 + 1094000^2 = \mathbf{1}299209^2$$
$$\mathbf{12}0700791^2 + 12034000^2 = \mathbf{121}299209^2$$
$$\mathbf{1232}0700791^2 + 121434000^2 = \mathbf{12321}299209^2$$
$$\mathbf{123432}0700791^2 + 1215434000^2 = \mathbf{1234321}299209^2 \quad (5.547)$$

$0699696^2 + 1096000^2 = \mathbf{1}\,300304^2$

$\mathbf{12}\,0699696^2 + 12056000^2 = \mathbf{121}\,300304^2$

$\mathbf{1232}\,0699696^2 + 121656000^2 = \mathbf{12321}\,300304^2$

$\mathbf{123432}\,0699696^2 + 1217656000^2 = \mathbf{1234321}\,300304^2 \quad (5.548)$

$0698599^2 + 1098000^2 = \mathbf{1}\,301401^2$

$\mathbf{12}\,0698599^2 + 12078000^2 = \mathbf{121}\,301401^2$

$\mathbf{1232}\,0698599^2 + 121878000^2 = \mathbf{12321}\,301401^2$

$\mathbf{123432}\,0698599^2 + 1219878000^2 = \mathbf{1234321}\,301401^2 \quad (5.549)$

$0697500^2 + 1100000^2 = \mathbf{1}\,302500^2$

$\mathbf{12}\,0697500^2 + 12100000^2 = \mathbf{121}\,302500^2$

$\mathbf{1232}\,0697500^2 + 122100000^2 = \mathbf{12321}\,302500^2$

$\mathbf{123432}\,0697500^2 + 1222100000^2 = \mathbf{1234321}\,302500^2 \quad (5.550)$

$0696399^2 + 1102000^2 = \mathbf{1}\,303601^2$

$\mathbf{12}\,0696399^2 + 12122000^2 = \mathbf{121}\,303601^2$

$\mathbf{1232}\,0696399^2 + 122322000^2 = \mathbf{12321}\,303601^2$

$\mathbf{123432}\,0696399^2 + 1224322000^2 = \mathbf{1234321}\,303601^2 \quad (5.551)$

$0695296^2 + 1104000^2 = \mathbf{1}\,304704^2$

$\mathbf{12}\,0695296^2 + 12144000^2 = \mathbf{121}\,304704^2$

$\mathbf{1232}\,0695296^2 + 122544000^2 = \mathbf{12321}\,304704^2$

$\mathbf{123432}\,0695296^2 + 1226544000^2 = \mathbf{1234321}\,304704^2 \quad (5.552)$

$0694191^2 + 1106000^2 = \mathbf{1}\,305809^2$

$\mathbf{12}\,0694191^2 + 12166000^2 = \mathbf{121}\,305809^2$

$\mathbf{1232}\,0694191^2 + 122766000^2 = \mathbf{12321}\,305809^2$

$\mathbf{123432}\,0694191^2 + 1228766000^2 = \mathbf{1234321}\,305809^2 \quad (5.553)$

$0693084^2 + 1108000^2 = \mathbf{1}\,306916^2$

$\mathbf{12}\,0693084^2 + 12188000^2 = \mathbf{121}\,306916^2$

$\mathbf{1232}\,0693084^2 + 122988000^2 = \mathbf{12321}\,306916^2$

$\mathbf{123432}\,0693084^2 + 1230988000^2 = \mathbf{1234321}\,306916^2 \quad (5.554)$

$0691975^2 + 1110000^2 = \mathbf{1}\,308025^2$

$\mathbf{12}\,0691975^2 + 12210000^2 = \mathbf{121}\,308025^2$

$\mathbf{1232}\,0691975^2 + 123210000^2 = \mathbf{12321}\,308025^2$

$\mathbf{123432}\,0691975^2 + 1233210000^2 = \mathbf{1234321}\,308025^2 \quad (5.555)$

$0690864^2 + 1112000^2 = \mathbf{1}\,309136^2$

$\mathbf{12}\,0690864^2 + 12232000^2 = \mathbf{121}\,309136^2$

$\mathbf{1232}\,0690864^2 + 123432000^2 = \mathbf{12321}\,309136^2$

$\mathbf{123432}\,0690864^2 + 1235432000^2 = \mathbf{1234321}\,309136^2 \quad (5.556)$

$0689751^2 + 1114000^2 = \mathbf{1}\,310249^2$

$\mathbf{12}\,0689751^2 + 12254000^2 = \mathbf{121}\,310249^2$

$\mathbf{1232}\,0689751^2 + 123654000^2 = \mathbf{12321}\,310249^2$

$\mathbf{123432}\,0689751^2 + 1237654000^2 = \mathbf{1234321}\,310249^2 \quad (5.557)$

$0688636^2 + 1116000^2 = \mathbf{1}\,311364^2$

$\mathbf{12}\,0688636^2 + 12276000^2 = \mathbf{121}\,311364^2$

$\mathbf{1232}\,0688636^2 + 123876000^2 = \mathbf{12321}\,311364^2$

$\mathbf{123432}\,0688636^2 + 1239876000^2 = \mathbf{1234321}\,311364^2 \quad (5.558)$

$0687519^2 + 1118000^2 = \mathbf{1}\,312481^2$

$\mathbf{12}\,0687519^2 + 12298000^2 = \mathbf{121}\,312481^2$

$\mathbf{1232}\,0687519^2 + 124098000^2 = \mathbf{12321}\,312481^2$

$\mathbf{123432}\,0687519^2 + 1242098000^2 = \mathbf{1234321}\,312481^2 \quad (5.559)$

$0686400^2 + 1120000^2 = \mathbf{1}\,313600^2$

$\mathbf{12}\,0686400^2 + 12320000^2 = \mathbf{121}\,313600^2$

$\mathbf{1232}\,0686400^2 + 124320000^2 = \mathbf{12321}\,313600^2$

$\mathbf{123432}\,0686400^2 + 1244320000^2 = \mathbf{1234321}\,313600^2 \quad (5.560)$

$0685279^2 + 1122000^2 = \mathbf{1}\,314721^2$

$\mathbf{12}\,0685279^2 + 12342000^2 = \mathbf{121}\,314721^2$

$\mathbf{1232}\,0685279^2 + 124542000^2 = \mathbf{12321}\,314721^2$

$\mathbf{123432}\,0685279^2 + 1246542000^2 = \mathbf{1234321}\,314721^2 \quad (5.561)$

$0684156^2 + 1124000^2 = \mathbf{1}\,315844^2$

$\mathbf{12}\,0684156^2 + 12364000^2 = \mathbf{121}\,315844^2$

$\mathbf{1232}\,0684156^2 + 124764000^2 = \mathbf{12321}\,315844^2$

$\mathbf{123432}\,0684156^2 + 1248764000^2 = \mathbf{1234321}\,315844^2 \quad (5.562)$

$0683031^2 + 1126000^2 = \mathbf{1}\,316969^2$

$\mathbf{12}\,0683031^2 + 12386000^2 = \mathbf{121}\,316969^2$

$\mathbf{1232}\,0683031^2 + 124986000^2 = \mathbf{12321}\,316969^2$

$\mathbf{123432}\,0683031^2 + 1250986000^2 = \mathbf{1234321}\,316969^2 \quad (5.563)$

$0681904^2 + 1128000^2 = \mathbf{1}\,318096^2$

$\mathbf{12}\,0681904^2 + 12408000^2 = \mathbf{121}\,318096^2$

$\mathbf{1232}\,0681904^2 + 125208000^2 = \mathbf{12321}\,318096^2$

$\mathbf{123432}\,0681904^2 + 1253208000^2 = \mathbf{1234321}\,318096^2 \quad (5.564)$

$0680775^2 + 1130000^2 = \mathbf{1}\,319225^2$

$\mathbf{12}\,0680775^2 + 12430000^2 = \mathbf{121}\,319225^2$

$\mathbf{1232}\,0680775^2 + 125430000^2 = \mathbf{12321}\,319225^2$

$\mathbf{123432}\,0680775^2 + 1255430000^2 = \mathbf{1234321}\,319225^2$ (5.565)

$0679644^2 + 1132000^2 = \mathbf{1}\,320356^2$

$\mathbf{12}\,0679644^2 + 12452000^2 = \mathbf{121}\,320356^2$

$\mathbf{1232}\,0679644^2 + 125652000^2 = \mathbf{12321}\,320356^2$

$\mathbf{123432}\,0679644^2 + 1257652000^2 = \mathbf{1234321}\,320356^2$ (5.566)

$0678511^2 + 1134000^2 = \mathbf{1}\,321489^2$

$\mathbf{12}\,0678511^2 + 12474000^2 = \mathbf{121}\,321489^2$

$\mathbf{1232}\,0678511^2 + 125874000^2 = \mathbf{12321}\,321489^2$

$\mathbf{123432}\,0678511^2 + 1259874000^2 = \mathbf{1234321}\,321489^2$ (5.567)

$0677376^2 + 1136000^2 = \mathbf{1}\,322624^2$

$\mathbf{12}\,0677376^2 + 12496000^2 = \mathbf{121}\,322624^2$

$\mathbf{1232}\,0677376^2 + 126096000^2 = \mathbf{12321}\,322624^2$

$\mathbf{123432}\,0677376^2 + 1262096000^2 = \mathbf{1234321}\,322624^2$ (5.568)

$0676239^2 + 1138000^2 = \mathbf{1}\,323761^2$

$\mathbf{12}\,0676239^2 + 12518000^2 = \mathbf{121}\,323761^2$

$\mathbf{1232}\,0676239^2 + 126318000^2 = \mathbf{12321}\,323761^2$

$\mathbf{123432}\,0676239^2 + 1264318000^2 = \mathbf{1234321}\,323761^2$ (5.569)

$0675100^2 + 1140000^2 = \mathbf{1}\,324900^2$

$\mathbf{12}\,0675100^2 + 12540000^2 = \mathbf{121}\,324900^2$

$\mathbf{1232}\,0675100^2 + 126540000^2 = \mathbf{12321}\,324900^2$

$\mathbf{123432}\,0675100^2 + 1266540000^2 = \mathbf{1234321}\,324900^2$ (5.570)

$0673959^2 + 1142000^2 = \mathbf{1}\,326041^2$

$\mathbf{12}\,0673959^2 + 12562000^2 = \mathbf{121}\,326041^2$

$\mathbf{1232}\,0673959^2 + 126762000^2 = \mathbf{12321}\,326041^2$

$\mathbf{123432}\,0673959^2 + 1268762000^2 = \mathbf{1234321}\,326041^2$ (5.571)

$0672816^2 + 1144000^2 = \mathbf{1}\,327184^2$

$\mathbf{12}\,0672816^2 + 12584000^2 = \mathbf{121}\,327184^2$

$\mathbf{1232}\,0672816^2 + 126984000^2 = \mathbf{12321}\,327184^2$

$\mathbf{123432}\,0672816^2 + 1270984000^2 = \mathbf{1234321}\,327184^2$ (5.572)

$0671671^2 + 1146000^2 = \mathbf{1}\,328329^2$

$\mathbf{12}\,0671671^2 + 12606000^2 = \mathbf{121}\,328329^2$

$\mathbf{1232}\,0671671^2 + 127206000^2 = \mathbf{12321}\,328329^2$

$\mathbf{123432}\,0671671^2 + 1273206000^2 = \mathbf{1234321}\,328329^2$ (5.573)

$0670524^2 + 1148000^2 = \mathbf{1}\,329476^2$

$\mathbf{12}\,0670524^2 + 12628000^2 = \mathbf{121}\,329476^2$

$\mathbf{1232}\,0670524^2 + 127428000^2 = \mathbf{12321}\,329476^2$

$\mathbf{123432}\,0670524^2 + 1275428000^2 = \mathbf{1234321}\,329476^2$ (5.574)

$0669375^2 + 1150000^2 = \mathbf{1}\,330625^2$

$\mathbf{12}\,0669375^2 + 12650000^2 = \mathbf{121}\,330625^2$

$\mathbf{1232}\,0669375^2 + 127650000^2 = \mathbf{12321}\,330625^2$

$\mathbf{123432}\,0669375^2 + 1277650000^2 = \mathbf{1234321}\,330625^2$ (5.575)

$0668224^2 + 1152000^2 = \mathbf{1}\,331776^2$

$\mathbf{12}\,0668224^2 + 12672000^2 = \mathbf{121}\,331776^2$

$\mathbf{1232}\,0668224^2 + 127872000^2 = \mathbf{12321}\,331776^2$

$\mathbf{123432}\,0668224^2 + 1279872000^2 = \mathbf{1234321}\,331776^2$ (5.576)

$0667071^2 + 1154000^2 = \mathbf{1}\,332929^2$

$\mathbf{12}\,0667071^2 + 12694000^2 = \mathbf{121}\,332929^2$

$\mathbf{1232}\,0667071^2 + 128094000^2 = \mathbf{12321}\,332929^2$

$\mathbf{123432}\,0667071^2 + 1282094000^2 = \mathbf{1234321}\,332929^2$ (5.577)

$0665916^2 + 1156000^2 = \mathbf{1}\,334084^2$

$\mathbf{12}\,0665916^2 + 12716000^2 = \mathbf{121}\,334084^2$

$\mathbf{1232}\,0665916^2 + 128316000^2 = \mathbf{12321}\,334084^2$

$\mathbf{123432}\,0665916^2 + 1284316000^2 = \mathbf{1234321}\,334084^2$ (5.578)

$0664759^2 + 1158000^2 = \mathbf{1}\,335241^2$

$\mathbf{12}\,0664759^2 + 12738000^2 = \mathbf{121}\,335241^2$

$\mathbf{1232}\,0664759^2 + 128538000^2 = \mathbf{12321}\,335241^2$

$\mathbf{123432}\,0664759^2 + 1286538000^2 = \mathbf{1234321}\,335241^2$ (5.579)

$0663600^2 + 1160000^2 = \mathbf{1}\,336400^2$

$\mathbf{12}\,0663600^2 + 12760000^2 = \mathbf{121}\,336400^2$

$\mathbf{1232}\,0663600^2 + 128760000^2 = \mathbf{12321}\,336400^2$

$\mathbf{123432}\,0663600^2 + 1288760000^2 = \mathbf{1234321}\,336400^2$ (5.580)

$0662439^2 + 1162000^2 = \mathbf{1}\,337561^2$

$\mathbf{12}\,0662439^2 + 12782000^2 = \mathbf{121}\,337561^2$

$\mathbf{1232}\,0662439^2 + 128982000^2 = \mathbf{12321}\,337561^2$

$\mathbf{123432}\,0662439^2 + 1290982000^2 = \mathbf{1234321}\,337561^2$ (5.581)

$$0661276^2 + 1164000^2 = 1\,338724^2$$
$$12\,0661276^2 + 12804000^2 = 121\,338724^2$$
$$1232\,0661276^2 + 129204000^2 = 12321\,338724^2$$
$$123432\,0661276^2 + 1293204000^2 = 1234321\,338724^2 \quad (5.582)$$

$$0650719^2 + 1182000^2 = 1\,349281^2$$
$$12\,0650719^2 + 13002000^2 = 121\,349281^2$$
$$1232\,0650719^2 + 131202000^2 = 12321\,349281^2$$
$$123432\,0650719^2 + 1313202000^2 = 1234321\,349281^2 \quad (5.591)$$

$$0660111^2 + 1166000^2 = 1\,339889^2$$
$$12\,0660111^2 + 12826000^2 = 121\,339889^2$$
$$1232\,0660111^2 + 129426000^2 = 12321\,339889^2$$
$$123432\,0660111^2 + 1295426000^2 = 1234321\,339889^2 \quad (5.583)$$

$$0649536^2 + 1184000^2 = 1\,350464^2$$
$$12\,0649536^2 + 13024000^2 = 121\,350464^2$$
$$1232\,0649536^2 + 131424000^2 = 12321\,350464^2$$
$$123432\,0649536^2 + 1315424000^2 = 1234321\,350464^2 \quad (5.592)$$

$$0658944^2 + 1168000^2 = 1\,341056^2$$
$$12\,0658944^2 + 12848000^2 = 121\,341056^2$$
$$1232\,0658944^2 + 129648000^2 = 12321\,341056^2$$
$$123432\,0658944^2 + 1297648000^2 = 1234321\,341056^2 \quad (5.584)$$

$$0648351^2 + 1186000^2 = 1\,351649^2$$
$$12\,0648351^2 + 13046000^2 = 121\,351649^2$$
$$1232\,0648351^2 + 131646000^2 = 12321\,351649^2$$
$$123432\,0648351^2 + 1317646000^2 = 1234321\,351649^2 \quad (5.593)$$

$$0657775^2 + 1170000^2 = 1\,342225^2$$
$$12\,0657775^2 + 12870000^2 = 121\,342225^2$$
$$1232\,0657775^2 + 129870000^2 = 12321\,342225^2$$
$$123432\,0657775^2 + 1299870000^2 = 1234321\,342225^2 \quad (5.585)$$

$$0647164^2 + 1188000^2 = 1\,352836^2$$
$$12\,0647164^2 + 13068000^2 = 121\,352836^2$$
$$1232\,0647164^2 + 131868000^2 = 12321\,352836^2$$
$$123432\,0647164^2 + 1319868000^2 = 1234321\,352836^2 \quad (5.594)$$

$$0656604^2 + 1172000^2 = 1\,343396^2$$
$$12\,0656604^2 + 12892000^2 = 121\,343396^2$$
$$1232\,0656604^2 + 130092000^2 = 12321\,343396^2$$
$$123432\,0656604^2 + 1302092000^2 = 1234321\,343396^2 \quad (5.586)$$

$$0645975^2 + 1190000^2 = 1\,354025^2$$
$$12\,0645975^2 + 13090000^2 = 121\,354025^2$$
$$1232\,0645975^2 + 132090000^2 = 12321\,354025^2$$
$$123432\,0645975^2 + 1322090000^2 = 1234321\,354025^2 \quad (5.595)$$

$$0655431^2 + 1174000^2 = 1\,344569^2$$
$$12\,0655431^2 + 12914000^2 = 121\,344569^2$$
$$1232\,0655431^2 + 130314000^2 = 12321\,344569^2$$
$$123432\,0655431^2 + 1304314000^2 = 1234321\,344569^2 \quad (5.587)$$

$$0644784^2 + 1192000^2 = 1\,355216^2$$
$$12\,0644784^2 + 13112000^2 = 121\,355216^2$$
$$1232\,0644784^2 + 132312000^2 = 12321\,355216^2$$
$$123432\,0644784^2 + 1324312000^2 = 1234321\,355216^2 \quad (5.596)$$

$$0654256^2 + 1176000^2 = 1\,345744^2$$
$$12\,0654256^2 + 12936000^2 = 121\,345744^2$$
$$1232\,0654256^2 + 130536000^2 = 12321\,345744^2$$
$$123432\,0654256^2 + 1306536000^2 = 1234321\,345744^2 \quad (5.588)$$

$$0643591^2 + 1194000^2 = 1\,356409^2$$
$$12\,0643591^2 + 13134000^2 = 121\,356409^2$$
$$1232\,0643591^2 + 132534000^2 = 12321\,356409^2$$
$$123432\,0643591^2 + 1326534000^2 = 1234321\,356409^2 \quad (5.597)$$

$$0653079^2 + 1178000^2 = 1\,346921^2$$
$$12\,0653079^2 + 12958000^2 = 121\,346921^2$$
$$1232\,0653079^2 + 130758000^2 = 12321\,346921^2$$
$$123432\,0653079^2 + 1308758000^2 = 1234321\,346921^2 \quad (5.589)$$

$$0642396^2 + 1196000^2 = 1\,357604^2$$
$$12\,0642396^2 + 13156000^2 = 121\,357604^2$$
$$1232\,0642396^2 + 132756000^2 = 12321\,357604^2$$
$$123432\,0642396^2 + 1328756000^2 = 1234321\,357604^2 \quad (5.598)$$

$$0651900^2 + 1180000^2 = 1\,348100^2$$
$$12\,0651900^2 + 12980000^2 = 121\,348100^2$$
$$1232\,0651900^2 + 130980000^2 = 12321\,348100^2$$
$$123432\,0651900^2 + 1310980000^2 = 1234321\,348100^2 \quad (5.590)$$

$$0641199^2 + 1198000^2 = 1\,358801^2$$
$$12\,0641199^2 + 13178000^2 = 121\,358801^2$$
$$1232\,0641199^2 + 132978000^2 = 12321\,358801^2$$
$$123432\,0641199^2 + 1330978000^2 = 1234321\,358801^2 \quad (5.599)$$

5.7   For $n = 600,\ 601,\ 601,\ ...,697,\ 698,\ 699$:

Let's consider

$m = 1000,\ 11000,\ 111000,\ 1111000,\ 11111000,\ 111111000,\ 1111111000,\ 11111111000,\ 111111111000$

in (1.1), then for each value of $n = 600,\ 601,\ 601,\ ...,697,\ 698,\ 699$; there are 100 *palindromic-type pandigital Pythagorean patterns* given below. In each case, only first four values are written. The other 5 values can be written on similar lines as done in subsection 5.1.1.

$$0640000^2 + 1200000^2 = \mathbf{1}\,360000^2$$
$$\mathbf{12}\,0640000^2 + 13200000^2 = \mathbf{121}\,360000^2$$
$$\mathbf{1232}\,0640000^2 + 133200000^2 = \mathbf{12321}\,360000^2$$
$$\mathbf{123432}\,0640000^2 + 1333200000^2 = \mathbf{1234321}\,360000^2 \quad (5.600)$$

$$0638799^2 + 1202000^2 = \mathbf{1}\,361201^2$$
$$\mathbf{12}\,0638799^2 + 13222000^2 = \mathbf{121}\,361201^2$$
$$\mathbf{1232}\,0638799^2 + 133422000^2 = \mathbf{12321}\,361201^2$$
$$\mathbf{123432}\,0638799^2 + 1335422000^2 = \mathbf{1234321}\,361201^2 \quad (5.601)$$

$$0637596^2 + 1204000^2 = \mathbf{1}\,362404^2$$
$$\mathbf{12}\,0637596^2 + 13244000^2 = \mathbf{121}\,362404^2$$
$$\mathbf{1232}\,0637596^2 + 133644000^2 = \mathbf{12321}\,362404^2$$
$$\mathbf{123432}\,0637596^2 + 1337644000^2 = \mathbf{1234321}\,362404^2 \quad (5.602)$$

$$0636391^2 + 1206000^2 = \mathbf{1}\,363609^2$$
$$\mathbf{12}\,0636391^2 + 13266000^2 = \mathbf{121}\,363609^2$$
$$\mathbf{1232}\,0636391^2 + 133866000^2 = \mathbf{12321}\,363609^2$$
$$\mathbf{123432}\,0636391^2 + 1339866000^2 = \mathbf{1234321}\,363609^2 \quad (5.603)$$

$$0635184^2 + 1208000^2 = \mathbf{1}\,364816^2$$
$$\mathbf{12}\,0635184^2 + 13288000^2 = \mathbf{121}\,364816^2$$
$$\mathbf{1232}\,0635184^2 + 134088000^2 = \mathbf{12321}\,364816^2$$
$$\mathbf{123432}\,0635184^2 + 1342088000^2 = \mathbf{1234321}\,364816^2 \quad (5.604)$$

$$0633975^2 + 1210000^2 = \mathbf{1}\,366025^2$$
$$\mathbf{12}\,0633975^2 + 13310000^2 = \mathbf{121}\,366025^2$$
$$\mathbf{1232}\,0633975^2 + 134310000^2 = \mathbf{12321}\,366025^2$$
$$\mathbf{123432}\,0633975^2 + 1344310000^2 = \mathbf{1234321}\,366025^2 \quad (5.605)$$

$$0632764^2 + 1212000^2 = \mathbf{1}\,367236^2$$
$$\mathbf{12}\,0632764^2 + 13332000^2 = \mathbf{121}\,367236^2$$
$$\mathbf{1232}\,0632764^2 + 134532000^2 = \mathbf{12321}\,367236^2$$
$$\mathbf{123432}\,0632764^2 + 1346532000^2 = \mathbf{1234321}\,367236^2 \quad (5.606)$$

$$0631551^2 + 1214000^2 = \mathbf{1}\,368449^2$$
$$\mathbf{12}\,0631551^2 + 13354000^2 = \mathbf{121}\,368449^2$$
$$\mathbf{1232}\,0631551^2 + 134754000^2 = \mathbf{12321}\,368449^2$$
$$\mathbf{123432}\,0631551^2 + 1348754000^2 = \mathbf{1234321}\,368449^2 \quad (5.607)$$

$$0630336^2 + 1216000^2 = \mathbf{1}\,369664^2$$
$$\mathbf{12}\,0630336^2 + 13376000^2 = \mathbf{121}\,369664^2$$
$$\mathbf{1232}\,0630336^2 + 134976000^2 = \mathbf{12321}\,369664^2$$
$$\mathbf{123432}\,0630336^2 + 1350976000^2 = \mathbf{1234321}\,369664^2 \quad (5.608)$$

$$0629119^2 + 1218000^2 = \mathbf{1}\,370881^2$$
$$\mathbf{12}\,0629119^2 + 13398000^2 = \mathbf{121}\,370881^2$$
$$\mathbf{1232}\,0629119^2 + 135198000^2 = \mathbf{12321}\,370881^2$$
$$\mathbf{123432}\,0629119^2 + 1353198000^2 = \mathbf{1234321}\,370881^2 \quad (5.609)$$

$$0627900^2 + 1220000^2 = \mathbf{1}\,372100^2$$
$$\mathbf{12}\,0627900^2 + 13420000^2 = \mathbf{121}\,372100^2$$
$$\mathbf{1232}\,0627900^2 + 135420000^2 = \mathbf{12321}\,372100^2$$
$$\mathbf{123432}\,0627900^2 + 1355420000^2 = \mathbf{1234321}\,372100^2 \quad (5.610)$$

$$0626679^2 + 1222000^2 = \mathbf{1}\,373321^2$$
$$\mathbf{12}\,0626679^2 + 13442000^2 = \mathbf{121}\,373321^2$$
$$\mathbf{1232}\,0626679^2 + 135642000^2 = \mathbf{12321}\,373321^2$$
$$\mathbf{123432}\,0626679^2 + 1357642000^2 = \mathbf{1234321}\,373321^2 \quad (5.611)$$

$$0625456^2 + 1224000^2 = \mathbf{1}\,374544^2$$
$$\mathbf{12}\,0625456^2 + 13464000^2 = \mathbf{121}\,374544^2$$
$$\mathbf{1232}\,0625456^2 + 135864000^2 = \mathbf{12321}\,374544^2$$
$$\mathbf{123432}\,0625456^2 + 1359864000^2 = \mathbf{1234321}\,374544^2 \quad (5.612)$$

$$0624231^2 + 1226000^2 = \mathbf{1}\,375769^2$$
$$\mathbf{12}\,0624231^2 + 13486000^2 = \mathbf{121}\,375769^2$$
$$\mathbf{1232}\,0624231^2 + 136086000^2 = \mathbf{12321}\,375769^2$$
$$\mathbf{123432}\,0624231^2 + 1362086000^2 = \mathbf{1234321}\,375769^2 \quad (5.613)$$

$0623004^2 + 1228000^2 \quad = \mathbf{1}\,376996^2$

$\mathbf{12}\,0623004^2 + 13508000^2 \quad = \mathbf{121}\,376996^2$

$\mathbf{1232}\,0623004^2 + 136308000^2 \quad = \mathbf{12321}\,376996^2$

$\mathbf{123432}\,0623004^2 + 1364308000^2 = \mathbf{1234321}\,376996^2 \quad (5.614)$

$0621775^2 + 1230000^2 \quad = \mathbf{1}\,378225^2$

$\mathbf{12}\,0621775^2 + 13530000^2 \quad = \mathbf{121}\,378225^2$

$\mathbf{1232}\,0621775^2 + 136530000^2 \quad = \mathbf{12321}\,378225^2$

$\mathbf{123432}\,0621775^2 + 1366530000^2 = \mathbf{1234321}\,378225^2 \quad (5.615)$

$0620544^2 + 1232000^2 \quad = \mathbf{1}\,379456^2$

$\mathbf{12}\,0620544^2 + 13552000^2 \quad = \mathbf{121}\,379456^2$

$\mathbf{1232}\,0620544^2 + 136752000^2 \quad = \mathbf{12321}\,379456^2$

$\mathbf{123432}\,0620544^2 + 1368752000^2 = \mathbf{1234321}\,379456^2 \quad (5.616)$

$0619311^2 + 1234000^2 \quad = \mathbf{1}\,380689^2$

$\mathbf{12}\,0619311^2 + 13574000^2 \quad = \mathbf{121}\,380689^2$

$\mathbf{1232}\,0619311^2 + 136974000^2 \quad = \mathbf{12321}\,380689^2$

$\mathbf{123432}\,0619311^2 + 1370974000^2 = \mathbf{1234321}\,380689^2 \quad (5.617)$

$0618076^2 + 1236000^2 \quad = \mathbf{1}\,381924^2$

$\mathbf{12}\,0618076^2 + 13596000^2 \quad = \mathbf{121}\,381924^2$

$\mathbf{1232}\,0618076^2 + 137196000^2 \quad = \mathbf{12321}\,381924^2$

$\mathbf{123432}\,0618076^2 + 1373196000^2 = \mathbf{1234321}\,381924^2 \quad (5.618)$

$0616839^2 + 1238000^2 \quad = \mathbf{1}\,383161^2$

$\mathbf{12}\,0616839^2 + 13618000^2 \quad = \mathbf{121}\,383161^2$

$\mathbf{1232}\,0616839^2 + 137418000^2 \quad = \mathbf{12321}\,383161^2$

$\mathbf{123432}\,0616839^2 + 1375418000^2 = \mathbf{1234321}\,383161^2 \quad (5.619)$

$0615600^2 + 1240000^2 \quad = \mathbf{1}\,384400^2$

$\mathbf{12}\,0615600^2 + 13640000^2 \quad = \mathbf{121}\,384400^2$

$\mathbf{1232}\,0615600^2 + 137640000^2 \quad = \mathbf{12321}\,384400^2$

$\mathbf{123432}\,0615600^2 + 1377640000^2 = \mathbf{1234321}\,384400^2 \quad (5.620)$

$0614359^2 + 1242000^2 \quad = \mathbf{1}\,385641^2$

$\mathbf{12}\,0614359^2 + 13662000^2 \quad = \mathbf{121}\,385641^2$

$\mathbf{1232}\,0614359^2 + 137862000^2 \quad = \mathbf{12321}\,385641^2$

$\mathbf{123432}\,0614359^2 + 1379862000^2 = \mathbf{1234321}\,385641^2 \quad (5.621)$

$0613116^2 + 1244000^2 \quad = \mathbf{1}\,386884^2$

$\mathbf{12}\,0613116^2 + 13684000^2 \quad = \mathbf{121}\,386884^2$

$\mathbf{1232}\,0613116^2 + 138084000^2 \quad = \mathbf{12321}\,386884^2$

$\mathbf{123432}\,0613116^2 + 1382084000^2 = \mathbf{1234321}\,386884^2 \quad (5.622)$

$0611871^2 + 1246000^2 \quad = \mathbf{1}\,388129^2$

$\mathbf{12}\,0611871^2 + 13706000^2 \quad = \mathbf{121}\,388129^2$

$\mathbf{1232}\,0611871^2 + 138306000^2 \quad = \mathbf{12321}\,388129^2$

$\mathbf{123432}\,0611871^2 + 1384306000^2 = \mathbf{1234321}\,388129^2 \quad (5.623)$

$0610624^2 + 1248000^2 \quad = \mathbf{1}\,389376^2$

$\mathbf{12}\,0610624^2 + 13728000^2 \quad = \mathbf{121}\,389376^2$

$\mathbf{1232}\,0610624^2 + 138528000^2 \quad = \mathbf{12321}\,389376^2$

$\mathbf{123432}\,0610624^2 + 1386528000^2 = \mathbf{1234321}\,389376^2 \quad (5.624)$

$0609375^2 + 1250000^2 \quad = \mathbf{1}\,390625^2$

$\mathbf{12}\,0609375^2 + 13750000^2 \quad = \mathbf{121}\,390625^2$

$\mathbf{1232}\,0609375^2 + 138750000^2 \quad = \mathbf{12321}\,390625^2$

$\mathbf{123432}\,0609375^2 + 1388750000^2 = \mathbf{1234321}\,390625^2 \quad (5.625)$

$0608124^2 + 1252000^2 \quad = \mathbf{1}\,391876^2$

$\mathbf{12}\,0608124^2 + 13772000^2 \quad = \mathbf{121}\,391876^2$

$\mathbf{1232}\,0608124^2 + 138972000^2 \quad = \mathbf{12321}\,391876^2$

$\mathbf{123432}\,0608124^2 + 1390972000^2 = \mathbf{1234321}\,391876^2 \quad (5.626)$

$0606871^2 + 1254000^2 \quad = \mathbf{1}\,393129^2$

$\mathbf{12}\,0606871^2 + 13794000^2 \quad = \mathbf{121}\,393129^2$

$\mathbf{1232}\,0606871^2 + 139194000^2 \quad = \mathbf{12321}\,393129^2$

$\mathbf{123432}\,0606871^2 + 1393194000^2 = \mathbf{1234321}\,393129^2 \quad (5.627)$

$0605616^2 + 1256000^2 \quad = \mathbf{1}\,394384^2$

$\mathbf{12}\,0605616^2 + 13816000^2 \quad = \mathbf{121}\,394384^2$

$\mathbf{1232}\,0605616^2 + 139416000^2 \quad = \mathbf{12321}\,394384^2$

$\mathbf{123432}\,0605616^2 + 1395416000^2 = \mathbf{1234321}\,394384^2 \quad (5.628)$

$0604359^2 + 1258000^2 \quad = \mathbf{1}\,395641^2$

$\mathbf{12}\,0604359^2 + 13838000^2 \quad = \mathbf{121}\,395641^2$

$\mathbf{1232}\,0604359^2 + 139638000^2 \quad = \mathbf{12321}\,395641^2$

$\mathbf{123432}\,0604359^2 + 1397638000^2 = \mathbf{1234321}\,395641^2 \quad (5.629)$

$0603100^2 + 1260000^2 \quad = \mathbf{1}\,396900^2$

$\mathbf{12}\,0603100^2 + 13860000^2 \quad = \mathbf{121}\,396900^2$

$\mathbf{1232}\,0603100^2 + 139860000^2 \quad = \mathbf{12321}\,396900^2$

$\mathbf{123432}\,0603100^2 + 1399860000^2 = \mathbf{1234321}\,396900^2 \quad (5.630)$

$$0601839^2 + 1262000^2 = \mathbf{1}398161^2$$
$$\mathbf{12}0601839^2 + 13882000^2 = \mathbf{121}398161^2$$
$$\mathbf{1232}0601839^2 + 140082000^2 = \mathbf{12321}398161^2$$
$$\mathbf{123432}0601839^2 + 1402082000^2 = \mathbf{1234321}398161^2 \quad (5.631)$$

$$0600576^2 + 1264000^2 = \mathbf{1}399424^2$$
$$\mathbf{12}0600576^2 + 13904000^2 = \mathbf{121}399424^2$$
$$\mathbf{1232}0600576^2 + 140304000^2 = \mathbf{12321}399424^2$$
$$\mathbf{123432}0600576^2 + 1404304000^2 = \mathbf{1234321}399424^2 \quad (5.632)$$

$$0599311^2 + 1266000^2 = \mathbf{1}400689^2$$
$$\mathbf{12}0599311^2 + 13926000^2 = \mathbf{121}400689^2$$
$$\mathbf{1232}0599311^2 + 140526000^2 = \mathbf{12321}400689^2$$
$$\mathbf{123432}0599311^2 + 1406526000^2 = \mathbf{1234321}400689^2 \quad (5.633)$$

$$0598044^2 + 1268000^2 = \mathbf{1}401956^2$$
$$\mathbf{12}0598044^2 + 13948000^2 = \mathbf{121}401956^2$$
$$\mathbf{1232}0598044^2 + 140748000^2 = \mathbf{12321}401956^2$$
$$\mathbf{123432}0598044^2 + 1408748000^2 = \mathbf{1234321}401956^2 \quad (5.634)$$

$$0596775^2 + 1270000^2 = \mathbf{1}403225^2$$
$$\mathbf{12}0596775^2 + 13970000^2 = \mathbf{121}403225^2$$
$$\mathbf{1232}0596775^2 + 140970000^2 = \mathbf{12321}403225^2$$
$$\mathbf{123432}0596775^2 + 1410970000^2 = \mathbf{1234321}403225^2 \quad (5.635)$$

$$0595504^2 + 1272000^2 = \mathbf{1}404496^2$$
$$\mathbf{12}0595504^2 + 13992000^2 = \mathbf{121}404496^2$$
$$\mathbf{1232}0595504^2 + 141192000^2 = \mathbf{12321}404496^2$$
$$\mathbf{123432}0595504^2 + 1413192000^2 = \mathbf{1234321}404496^2 \quad (5.636)$$

$$0594231^2 + 1274000^2 = \mathbf{1}405769^2$$
$$\mathbf{12}0594231^2 + 14014000^2 = \mathbf{121}405769^2$$
$$\mathbf{1232}0594231^2 + 141414000^2 = \mathbf{12321}405769^2$$
$$\mathbf{123432}0594231^2 + 1415414000^2 = \mathbf{1234321}405769^2 \quad (5.637)$$

$$0592956^2 + 1276000^2 = \mathbf{1}407044^2$$
$$\mathbf{12}0592956^2 + 14036000^2 = \mathbf{121}407044^2$$
$$\mathbf{1232}0592956^2 + 141636000^2 = \mathbf{12321}407044^2$$
$$\mathbf{123432}0592956^2 + 1417636000^2 = \mathbf{1234321}407044^2 \quad (5.638)$$

$$0591679^2 + 1278000^2 = \mathbf{1}408321^2$$
$$\mathbf{12}0591679^2 + 14058000^2 = \mathbf{121}408321^2$$
$$\mathbf{1232}0591679^2 + 141858000^2 = \mathbf{12321}408321^2$$
$$\mathbf{123432}0591679^2 + 1419858000^2 = \mathbf{1234321}408321^2 \quad (5.639)$$

$$0590400^2 + 1280000^2 = \mathbf{1}409600^2$$
$$\mathbf{12}0590400^2 + 14080000^2 = \mathbf{121}409600^2$$
$$\mathbf{1232}0590400^2 + 142080000^2 = \mathbf{12321}409600^2$$
$$\mathbf{123432}0590400^2 + 1422080000^2 = \mathbf{1234321}409600^2 \quad (5.640)$$

$$0589119^2 + 1282000^2 = \mathbf{1}410881^2$$
$$\mathbf{12}0589119^2 + 14102000^2 = \mathbf{121}410881^2$$
$$\mathbf{1232}0589119^2 + 142302000^2 = \mathbf{12321}410881^2$$
$$\mathbf{123432}0589119^2 + 1424302000^2 = \mathbf{1234321}410881^2 \quad (5.641)$$

$$0587836^2 + 1284000^2 = \mathbf{1}412164^2$$
$$\mathbf{12}0587836^2 + 14124000^2 = \mathbf{121}412164^2$$
$$\mathbf{1232}0587836^2 + 142524000^2 = \mathbf{12321}412164^2$$
$$\mathbf{123432}0587836^2 + 1426524000^2 = \mathbf{1234321}412164^2 \quad (5.642)$$

$$0586551^2 + 1286000^2 = \mathbf{1}413449^2$$
$$\mathbf{12}0586551^2 + 14146000^2 = \mathbf{121}413449^2$$
$$\mathbf{1232}0586551^2 + 142746000^2 = \mathbf{12321}413449^2$$
$$\mathbf{123432}0586551^2 + 1428746000^2 = \mathbf{1234321}413449^2 \quad (5.643)$$

$$0585264^2 + 1288000^2 = \mathbf{1}414736^2$$
$$\mathbf{12}0585264^2 + 14168000^2 = \mathbf{121}414736^2$$
$$\mathbf{1232}0585264^2 + 142968000^2 = \mathbf{12321}414736^2$$
$$\mathbf{123432}0585264^2 + 1430968000^2 = \mathbf{1234321}414736^2 \quad (5.644)$$

$$0583975^2 + 1290000^2 = \mathbf{1}416025^2$$
$$\mathbf{12}0583975^2 + 14190000^2 = \mathbf{121}416025^2$$
$$\mathbf{1232}0583975^2 + 143190000^2 = \mathbf{12321}416025^2$$
$$\mathbf{123432}0583975^2 + 1433190000^2 = \mathbf{1234321}416025^2 \quad (5.645)$$

$$0582684^2 + 1292000^2 = \mathbf{1}417316^2$$
$$\mathbf{12}0582684^2 + 14212000^2 = \mathbf{121}417316^2$$
$$\mathbf{1232}0582684^2 + 143412000^2 = \mathbf{12321}417316^2$$
$$\mathbf{123432}0582684^2 + 1435412000^2 = \mathbf{1234321}417316^2 \quad (5.646)$$

$$0581391^2 + 1294000^2 = \mathbf{1}418609^2$$
$$\mathbf{12}0581391^2 + 14234000^2 = \mathbf{121}418609^2$$
$$\mathbf{1232}0581391^2 + 143634000^2 = \mathbf{12321}418609^2$$
$$\mathbf{123432}0581391^2 + 1437634000^2 = \mathbf{1234321}418609^2 \quad (5.647)$$

$$0580096^2 + 1296000^2 = \mathbf{1}\,419904^2$$
$$\mathbf{12}\,0580096^2 + 14256000^2 = \mathbf{121}\,419904^2$$
$$\mathbf{1232}\,0580096^2 + 143856000^2 = \mathbf{12321}\,419904^2$$
$$\mathbf{123432}\,0580096^2 + 1439856000^2 = \mathbf{1234321}\,419904^2 \quad (5.648)$$

$$0578799^2 + 1298000^2 = \mathbf{1}\,421201^2$$
$$\mathbf{12}\,0578799^2 + 14278000^2 = \mathbf{121}\,421201^2$$
$$\mathbf{1232}\,0578799^2 + 144078000^2 = \mathbf{12321}\,421201^2$$
$$\mathbf{123432}\,0578799^2 + 1442078000^2 = \mathbf{1234321}\,421201^2 \quad (5.649)$$

$$0577500^2 + 1300000^2 = \mathbf{1}\,422500^2$$
$$\mathbf{12}\,0577500^2 + 14300000^2 = \mathbf{121}\,422500^2$$
$$\mathbf{1232}\,0577500^2 + 144300000^2 = \mathbf{12321}\,422500^2$$
$$\mathbf{123432}\,0577500^2 + 1444300000^2 = \mathbf{1234321}\,422500^2 \quad (5.650)$$

$$0576199^2 + 1302000^2 = \mathbf{1}\,423801^2$$
$$\mathbf{12}\,0576199^2 + 14322000^2 = \mathbf{121}\,423801^2$$
$$\mathbf{1232}\,0576199^2 + 144522000^2 = \mathbf{12321}\,423801^2$$
$$\mathbf{123432}\,0576199^2 + 1446522000^2 = \mathbf{1234321}\,423801^2 \quad (5.651)$$

$$0574896^2 + 1304000^2 = \mathbf{1}\,425104^2$$
$$\mathbf{12}\,0574896^2 + 14344000^2 = \mathbf{121}\,425104^2$$
$$\mathbf{1232}\,0574896^2 + 144744000^2 = \mathbf{12321}\,425104^2$$
$$\mathbf{123432}\,0574896^2 + 1448744000^2 = \mathbf{1234321}\,425104^2 \quad (5.652)$$

$$0573591^2 + 1306000^2 = \mathbf{1}\,426409^2$$
$$\mathbf{12}\,0573591^2 + 14366000^2 = \mathbf{121}\,426409^2$$
$$\mathbf{1232}\,0573591^2 + 144966000^2 = \mathbf{12321}\,426409^2$$
$$\mathbf{123432}\,0573591^2 + 1450966000^2 = \mathbf{1234321}\,426409^2 \quad (5.653)$$

$$0572284^2 + 1308000^2 = \mathbf{1}\,427716^2$$
$$\mathbf{12}\,0572284^2 + 14388000^2 = \mathbf{121}\,427716^2$$
$$\mathbf{1232}\,0572284^2 + 145188000^2 = \mathbf{12321}\,427716^2$$
$$\mathbf{123432}\,0572284^2 + 1453188000^2 = \mathbf{1234321}\,427716^2 \quad (5.654)$$

$$0570975^2 + 1310000^2 = \mathbf{1}\,429025^2$$
$$\mathbf{12}\,0570975^2 + 14410000^2 = \mathbf{121}\,429025^2$$
$$\mathbf{1232}\,0570975^2 + 145410000^2 = \mathbf{12321}\,429025^2$$
$$\mathbf{123432}\,0570975^2 + 1455410000^2 = \mathbf{1234321}\,429025^2 \quad (5.655)$$

$$0569664^2 + 1312000^2 = \mathbf{1}\,430336^2$$
$$\mathbf{12}\,0569664^2 + 14432000^2 = \mathbf{121}\,430336^2$$
$$\mathbf{1232}\,0569664^2 + 145632000^2 = \mathbf{12321}\,430336^2$$
$$\mathbf{123432}\,0569664^2 + 1457632000^2 = \mathbf{1234321}\,430336^2 \quad (5.656)$$

$$0568351^2 + 1314000^2 = \mathbf{1}\,431649^2$$
$$\mathbf{12}\,0568351^2 + 14454000^2 = \mathbf{121}\,431649^2$$
$$\mathbf{1232}\,0568351^2 + 145854000^2 = \mathbf{12321}\,431649^2$$
$$\mathbf{123432}\,0568351^2 + 1459854000^2 = \mathbf{1234321}\,431649^2 \quad (5.657)$$

$$0567036^2 + 1316000^2 = \mathbf{1}\,432964^2$$
$$\mathbf{12}\,0567036^2 + 14476000^2 = \mathbf{121}\,432964^2$$
$$\mathbf{1232}\,0567036^2 + 146076000^2 = \mathbf{12321}\,432964^2$$
$$\mathbf{123432}\,0567036^2 + 1462076000^2 = \mathbf{1234321}\,432964^2 \quad (5.658)$$

$$0565719^2 + 1318000^2 = \mathbf{1}\,434281^2$$
$$\mathbf{12}\,0565719^2 + 14498000^2 = \mathbf{121}\,434281^2$$
$$\mathbf{1232}\,0565719^2 + 146298000^2 = \mathbf{12321}\,434281^2$$
$$\mathbf{123432}\,0565719^2 + 1464298000^2 = \mathbf{1234321}\,434281^2 \quad (5.659)$$

$$0564400^2 + 1320000^2 = \mathbf{1}\,435600^2$$
$$\mathbf{12}\,0564400^2 + 14520000^2 = \mathbf{121}\,435600^2$$
$$\mathbf{1232}\,0564400^2 + 146520000^2 = \mathbf{12321}\,435600^2$$
$$\mathbf{123432}\,0564400^2 + 1466520000^2 = \mathbf{1234321}\,435600^2 \quad (5.660)$$

$$0563079^2 + 1322000^2 = \mathbf{1}\,436921^2$$
$$\mathbf{12}\,0563079^2 + 14542000^2 = \mathbf{121}\,436921^2$$
$$\mathbf{1232}\,0563079^2 + 146742000^2 = \mathbf{12321}\,436921^2$$
$$\mathbf{123432}\,0563079^2 + 1468742000^2 = \mathbf{1234321}\,436921^2 \quad (5.661)$$

$$0561756^2 + 1324000^2 = \mathbf{1}\,438244^2$$
$$\mathbf{12}\,0561756^2 + 14564000^2 = \mathbf{121}\,438244^2$$
$$\mathbf{1232}\,0561756^2 + 146964000^2 = \mathbf{12321}\,438244^2$$
$$\mathbf{123432}\,0561756^2 + 1470964000^2 = \mathbf{1234321}\,438244^2 \quad (5.662)$$

$$0560431^2 + 1326000^2 = \mathbf{1}\,439569^2$$
$$\mathbf{12}\,0560431^2 + 14586000^2 = \mathbf{121}\,439569^2$$
$$\mathbf{1232}\,0560431^2 + 147186000^2 = \mathbf{12321}\,439569^2$$
$$\mathbf{123432}\,0560431^2 + 1473186000^2 = \mathbf{1234321}\,439569^2 \quad (5.663)$$

$$0559104^2 + 1328000^2 = \mathbf{1}\,440896^2$$
$$\mathbf{12}\,0559104^2 + 14608000^2 = \mathbf{121}\,440896^2$$
$$\mathbf{1232}\,0559104^2 + 147408000^2 = \mathbf{12321}\,440896^2$$
$$\mathbf{123432}\,0559104^2 + 1475408000^2 = \mathbf{1234321}\,440896^2 \quad (5.664)$$

$0557775^2 + 1330000^2 = \mathbf{1}\,442225^2$

$\mathbf{12}\,0557775^2 + 14630000^2 = \mathbf{121}\,442225^2$

$\mathbf{1232}\,0557775^2 + 147630000^2 = \mathbf{12321}\,442225^2$

$\mathbf{123432}\,0557775^2 + 1477630000^2 = \mathbf{1234321}\,442225^2$ (5.665)

$0556444^2 + 1332000^2 = \mathbf{1}\,443556^2$

$\mathbf{12}\,0556444^2 + 14652000^2 = \mathbf{121}\,443556^2$

$\mathbf{1232}\,0556444^2 + 147852000^2 = \mathbf{12321}\,443556^2$

$\mathbf{123432}\,0556444^2 + 1479852000^2 = \mathbf{1234321}\,443556^2$ (5.666)

$0555111^2 + 1334000^2 = \mathbf{1}\,444889^2$

$\mathbf{12}\,0555111^2 + 14674000^2 = \mathbf{121}\,444889^2$

$\mathbf{1232}\,0555111^2 + 148074000^2 = \mathbf{12321}\,444889^2$

$\mathbf{123432}\,0555111^2 + 1482074000^2 = \mathbf{1234321}\,444889^2$ (5.667)

$0553776^2 + 1336000^2 = \mathbf{1}\,446224^2$

$\mathbf{12}\,0553776^2 + 14696000^2 = \mathbf{121}\,446224^2$

$\mathbf{1232}\,0553776^2 + 148296000^2 = \mathbf{12321}\,446224^2$

$\mathbf{123432}\,0553776^2 + 1484296000^2 = \mathbf{1234321}\,446224^2$ (5.668)

$0552439^2 + 1338000^2 = \mathbf{1}\,447561^2$

$\mathbf{12}\,0552439^2 + 14718000^2 = \mathbf{121}\,447561^2$

$\mathbf{1232}\,0552439^2 + 148518000^2 = \mathbf{12321}\,447561^2$

$\mathbf{123432}\,0552439^2 + 1486518000^2 = \mathbf{1234321}\,447561^2$ (5.669)

$0551100^2 + 1340000^2 = \mathbf{1}\,448900^2$

$\mathbf{12}\,0551100^2 + 14740000^2 = \mathbf{121}\,448900^2$

$\mathbf{1232}\,0551100^2 + 148740000^2 = \mathbf{12321}\,448900^2$

$\mathbf{123432}\,0551100^2 + 1488740000^2 = \mathbf{1234321}\,448900^2$ (5.670)

$0549759^2 + 1342000^2 = \mathbf{1}\,450241^2$

$\mathbf{12}\,0549759^2 + 14762000^2 = \mathbf{121}\,450241^2$

$\mathbf{1232}\,0549759^2 + 148962000^2 = \mathbf{12321}\,450241^2$

$\mathbf{123432}\,0549759^2 + 1490962000^2 = \mathbf{1234321}\,450241^2$ (5.671)

$0548416^2 + 1344000^2 = \mathbf{1}\,451584^2$

$\mathbf{12}\,0548416^2 + 14784000^2 = \mathbf{121}\,451584^2$

$\mathbf{1232}\,0548416^2 + 149184000^2 = \mathbf{12321}\,451584^2$

$\mathbf{123432}\,0548416^2 + 1493184000^2 = \mathbf{1234321}\,451584^2$ (5.672)

$0547071^2 + 1346000^2 = \mathbf{1}\,452929^2$

$\mathbf{12}\,0547071^2 + 14806000^2 = \mathbf{121}\,452929^2$

$\mathbf{1232}\,0547071^2 + 149406000^2 = \mathbf{12321}\,452929^2$

$\mathbf{123432}\,0547071^2 + 1495406000^2 = \mathbf{1234321}\,452929^2$ (5.673)

$0545724^2 + 1348000^2 = \mathbf{1}\,454276^2$

$\mathbf{12}\,0545724^2 + 14828000^2 = \mathbf{121}\,454276^2$

$\mathbf{1232}\,0545724^2 + 149628000^2 = \mathbf{12321}\,454276^2$

$\mathbf{123432}\,0545724^2 + 1497628000^2 = \mathbf{1234321}\,454276^2$ (5.674)

$0544375^2 + 1350000^2 = \mathbf{1}\,455625^2$

$\mathbf{12}\,0544375^2 + 14850000^2 = \mathbf{121}\,455625^2$

$\mathbf{1232}\,0544375^2 + 149850000^2 = \mathbf{12321}\,455625^2$

$\mathbf{123432}\,0544375^2 + 1499850000^2 = \mathbf{1234321}\,455625^2$ (5.675)

$0543024^2 + 1352000^2 = \mathbf{1}\,456976^2$

$\mathbf{12}\,0543024^2 + 14872000^2 = \mathbf{121}\,456976^2$

$\mathbf{1232}\,0543024^2 + 150072000^2 = \mathbf{12321}\,456976^2$

$\mathbf{123432}\,0543024^2 + 1502072000^2 = \mathbf{1234321}\,456976^2$ (5.676)

$0541671^2 + 1354000^2 = \mathbf{1}\,458329^2$

$\mathbf{12}\,0541671^2 + 14894000^2 = \mathbf{121}\,458329^2$

$\mathbf{1232}\,0541671^2 + 150294000^2 = \mathbf{12321}\,458329^2$

$\mathbf{123432}\,0541671^2 + 1504294000^2 = \mathbf{1234321}\,458329^2$ (5.677)

$0540316^2 + 1356000^2 = \mathbf{1}\,459684^2$

$\mathbf{12}\,0540316^2 + 14916000^2 = \mathbf{121}\,459684^2$

$\mathbf{1232}\,0540316^2 + 150516000^2 = \mathbf{12321}\,459684^2$

$\mathbf{123432}\,0540316^2 + 1506516000^2 = \mathbf{1234321}\,459684^2$ (5.678)

$0538959^2 + 1358000^2 = \mathbf{1}\,461041^2$

$\mathbf{12}\,0538959^2 + 14938000^2 = \mathbf{121}\,461041^2$

$\mathbf{1232}\,0538959^2 + 150738000^2 = \mathbf{12321}\,461041^2$

$\mathbf{123432}\,0538959^2 + 1508738000^2 = \mathbf{1234321}\,461041^2$ (5.679)

$0537600^2 + 1360000^2 = \mathbf{1}\,462400^2$

$\mathbf{12}\,0537600^2 + 14960000^2 = \mathbf{121}\,462400^2$

$\mathbf{1232}\,0537600^2 + 150960000^2 = \mathbf{12321}\,462400^2$

$\mathbf{123432}\,0537600^2 + 1510960000^2 = \mathbf{1234321}\,462400^2$ (5.680)

$0536239^2 + 1362000^2 = \mathbf{1}\,463761^2$

$\mathbf{12}\,0536239^2 + 14982000^2 = \mathbf{121}\,463761^2$

$\mathbf{1232}\,0536239^2 + 151182000^2 = \mathbf{12321}\,463761^2$

$\mathbf{123432}\,0536239^2 + 1513182000^2 = \mathbf{1234321}\,463761^2$ (5.681)

$$0534876^2 + 1364000^2 = \mathbf{1}\,465124^2$$
$$\mathbf{12}\,0534876^2 + 15004000^2 = \mathbf{121}\,465124^2$$
$$\mathbf{1232}\,0534876^2 + 151404000^2 = \mathbf{12321}\,465124^2$$
$$\mathbf{123432}\,0534876^2 + 1515404000^2 = \mathbf{1234321}\,465124^2 \quad (5.682)$$

$$0533511^2 + 1366000^2 = \mathbf{1}\,466489^2$$
$$\mathbf{12}\,0533511^2 + 15026000^2 = \mathbf{121}\,466489^2$$
$$\mathbf{1232}\,0533511^2 + 151626000^2 = \mathbf{12321}\,466489^2$$
$$\mathbf{123432}\,0533511^2 + 1517626000^2 = \mathbf{1234321}\,466489^2 \quad (5.683)$$

$$0532144^2 + 1368000^2 = \mathbf{1}\,467856^2$$
$$\mathbf{12}\,0532144^2 + 15048000^2 = \mathbf{121}\,467856^2$$
$$\mathbf{1232}\,0532144^2 + 151848000^2 = \mathbf{12321}\,467856^2$$
$$\mathbf{123432}\,0532144^2 + 1519848000^2 = \mathbf{1234321}\,467856^2 \quad (5.684)$$

$$0530775^2 + 1370000^2 = \mathbf{1}\,469225^2$$
$$\mathbf{12}\,0530775^2 + 15070000^2 = \mathbf{121}\,469225^2$$
$$\mathbf{1232}\,0530775^2 + 152070000^2 = \mathbf{12321}\,469225^2$$
$$\mathbf{123432}\,0530775^2 + 1522070000^2 = \mathbf{1234321}\,469225^2 \quad (5.685)$$

$$0529404^2 + 1372000^2 = \mathbf{1}\,470596^2$$
$$\mathbf{12}\,0529404^2 + 15092000^2 = \mathbf{121}\,470596^2$$
$$\mathbf{1232}\,0529404^2 + 152292000^2 = \mathbf{12321}\,470596^2$$
$$\mathbf{123432}\,0529404^2 + 1524292000^2 = \mathbf{1234321}\,470596^2 \quad (5.686)$$

$$0528031^2 + 1374000^2 = \mathbf{1}\,471969^2$$
$$\mathbf{12}\,0528031^2 + 15114000^2 = \mathbf{121}\,471969^2$$
$$\mathbf{1232}\,0528031^2 + 152514000^2 = \mathbf{12321}\,471969^2$$
$$\mathbf{123432}\,0528031^2 + 1526514000^2 = \mathbf{1234321}\,471969^2 \quad (5.687)$$

$$0526656^2 + 1376000^2 = \mathbf{1}\,473344^2$$
$$\mathbf{12}\,0526656^2 + 15136000^2 = \mathbf{121}\,473344^2$$
$$\mathbf{1232}\,0526656^2 + 152736000^2 = \mathbf{12321}\,473344^2$$
$$\mathbf{123432}\,0526656^2 + 1528736000^2 = \mathbf{1234321}\,473344^2 \quad (5.688)$$

$$0525279^2 + 1378000^2 = \mathbf{1}\,474721^2$$
$$\mathbf{12}\,0525279^2 + 15158000^2 = \mathbf{121}\,474721^2$$
$$\mathbf{1232}\,0525279^2 + 152958000^2 = \mathbf{12321}\,474721^2$$
$$\mathbf{123432}\,0525279^2 + 1530958000^2 = \mathbf{1234321}\,474721^2 \quad (5.689)$$

$$0523900^2 + 1380000^2 = \mathbf{1}\,476100^2$$
$$\mathbf{12}\,0523900^2 + 15180000^2 = \mathbf{121}\,476100^2$$
$$\mathbf{1232}\,0523900^2 + 153180000^2 = \mathbf{12321}\,476100^2$$
$$\mathbf{123432}\,0523900^2 + 1533180000^2 = \mathbf{1234321}\,476100^2 \quad (5.690)$$

$$0522519^2 + 1382000^2 = \mathbf{1}\,477481^2$$
$$\mathbf{12}\,0522519^2 + 15202000^2 = \mathbf{121}\,477481^2$$
$$\mathbf{1232}\,0522519^2 + 153402000^2 = \mathbf{12321}\,477481^2$$
$$\mathbf{123432}\,0522519^2 + 1535402000^2 = \mathbf{1234321}\,477481^2 \quad (5.691)$$

$$0521136^2 + 1384000^2 = \mathbf{1}\,478864^2$$
$$\mathbf{12}\,0521136^2 + 15224000^2 = \mathbf{121}\,478864^2$$
$$\mathbf{1232}\,0521136^2 + 153624000^2 = \mathbf{12321}\,478864^2$$
$$\mathbf{123432}\,0521136^2 + 1537624000^2 = \mathbf{1234321}\,478864^2 \quad (5.692)$$

$$0519751^2 + 1386000^2 = \mathbf{1}\,480249^2$$
$$\mathbf{12}\,0519751^2 + 15246000^2 = \mathbf{121}\,480249^2$$
$$\mathbf{1232}\,0519751^2 + 153846000^2 = \mathbf{12321}\,480249^2$$
$$\mathbf{123432}\,0519751^2 + 1539846000^2 = \mathbf{1234321}\,480249^2 \quad (5.693)$$

$$0518364^2 + 1388000^2 = \mathbf{1}\,481636^2$$
$$\mathbf{12}\,0518364^2 + 15268000^2 = \mathbf{121}\,481636^2$$
$$\mathbf{1232}\,0518364^2 + 154068000^2 = \mathbf{12321}\,481636^2$$
$$\mathbf{123432}\,0518364^2 + 1542068000^2 = \mathbf{1234321}\,481636^2 \quad (5.694)$$

$$0516975^2 + 1390000^2 = \mathbf{1}\,483025^2$$
$$\mathbf{12}\,0516975^2 + 15290000^2 = \mathbf{121}\,483025^2$$
$$\mathbf{1232}\,0516975^2 + 154290000^2 = \mathbf{12321}\,483025^2$$
$$\mathbf{123432}\,0516975^2 + 1544290000^2 = \mathbf{1234321}\,483025^2 \quad (5.695)$$

$$0515584^2 + 1392000^2 = \mathbf{1}\,484416^2$$
$$\mathbf{12}\,0515584^2 + 15312000^2 = \mathbf{121}\,484416^2$$
$$\mathbf{1232}\,0515584^2 + 154512000^2 = \mathbf{12321}\,484416^2$$
$$\mathbf{123432}\,0515584^2 + 1546512000^2 = \mathbf{1234321}\,484416^2 \quad (5.696)$$

$$0514191^2 + 1394000^2 = \mathbf{1}\,485809^2$$
$$\mathbf{12}\,0514191^2 + 15334000^2 = \mathbf{121}\,485809^2$$
$$\mathbf{1232}\,0514191^2 + 154734000^2 = \mathbf{12321}\,485809^2$$
$$\mathbf{123432}\,0514191^2 + 1548734000^2 = \mathbf{1234321}\,485809^2 \quad (5.697)$$

$$0512796^2 + 1396000^2 = \mathbf{1}\,487204^2$$
$$\mathbf{12}\,0512796^2 + 15356000^2 = \mathbf{121}\,487204^2$$
$$\mathbf{1232}\,0512796^2 + 154956000^2 = \mathbf{12321}\,487204^2$$
$$\mathbf{123432}\,0512796^2 + 1550956000^2 = \mathbf{1234321}\,487204^2 \quad (5.698)$$

$$0511399^2 + 1398000^2 = \mathbf{1}\,488601^2$$
$$\mathbf{12}\,0511399^2 + 15378000^2 = \mathbf{121}\,488601^2$$
$$\mathbf{1232}\,0511399^2 + 155178000^2 = \mathbf{12321}\,488601^2$$
$$\mathbf{123432}\,0511399^2 + 1553178000^2 = \mathbf{1234321}\,488601^2 \quad (5.699)$$

5.8   For $n = 700,\ 701,\ 701,\ ...,797,\ 798,\ 799:$

Let's consider

$m = 1000,\ 11000,\ 111000,\ 1111000,\ 11111000,\ 111111000,\ 1111111000,\ 11111111000,\ 111111111000$

in (1.1), then for each value of $n = 700,\ 701,\ 701,\ ...,797,\ 798,\ 799$; there are 100 *palindromic-type pandigital Pythagorean patterns* given below. In each case, only first four values are written. The other 5 values can be written on similar lines as done in subsection 5.1.1.

$$0510000^2 + 1400000^2 \quad = \mathbf{1}\,490000^2$$
$$\mathbf{12}\,0510000^2 + 15400000^2 \quad = \mathbf{121}\,490000^2$$
$$\mathbf{1232}\,0510000^2 + 155400000^2 \ = \mathbf{12321}\,490000^2$$
$$\mathbf{123432}\,0510000^2 + 1555400000^2 = \mathbf{1234321}\,490000^2 \quad (5.700)$$

$$0508599^2 + 1402000^2 \quad = \mathbf{1}\,491401^2$$
$$\mathbf{12}\,0508599^2 + 15422000^2 \quad = \mathbf{121}\,491401^2$$
$$\mathbf{1232}\,0508599^2 + 155622000^2 \ = \mathbf{12321}\,491401^2$$
$$\mathbf{123432}\,0508599^2 + 1557622000^2 = \mathbf{1234321}\,491401^2 \quad (5.701)$$

$$0507196^2 + 1404000^2 \quad = \mathbf{1}\,492804^2$$
$$\mathbf{12}\,0507196^2 + 15444000^2 \quad = \mathbf{121}\,492804^2$$
$$\mathbf{1232}\,0507196^2 + 155844000^2 \ = \mathbf{12321}\,492804^2$$
$$\mathbf{123432}\,0507196^2 + 1559844000^2 = \mathbf{1234321}\,492804^2 \quad (5.702)$$

$$0505791^2 + 1406000^2 \quad = \mathbf{1}\,494209^2$$
$$\mathbf{12}\,0505791^2 + 15466000^2 \quad = \mathbf{121}\,494209^2$$
$$\mathbf{1232}\,0505791^2 + 156066000^2 \ = \mathbf{12321}\,494209^2$$
$$\mathbf{123432}\,0505791^2 + 1562066000^2 = \mathbf{1234321}\,494209^2 \quad (5.703)$$

$$0504384^2 + 1408000^2 \quad = \mathbf{1}\,495616^2$$
$$\mathbf{12}\,0504384^2 + 15488000^2 \quad = \mathbf{121}\,495616^2$$
$$\mathbf{1232}\,0504384^2 + 156288000^2 \ = \mathbf{12321}\,495616^2$$
$$\mathbf{123432}\,0504384^2 + 1564288000^2 = \mathbf{1234321}\,495616^2 \quad (5.704)$$

$$0502975^2 + 1410000^2 \quad = \mathbf{1}\,497025^2$$
$$\mathbf{12}\,0502975^2 + 15510000^2 \quad = \mathbf{121}\,497025^2$$
$$\mathbf{1232}\,0502975^2 + 156510000^2 \ = \mathbf{12321}\,497025^2$$
$$\mathbf{123432}\,0502975^2 + 1566510000^2 = \mathbf{1234321}\,497025^2 \quad (5.705)$$

$$0501564^2 + 1412000^2 \quad = \mathbf{1}\,498436^2$$
$$\mathbf{12}\,0501564^2 + 15532000^2 \quad = \mathbf{121}\,498436^2$$
$$\mathbf{1232}\,0501564^2 + 156732000^2 \ = \mathbf{12321}\,498436^2$$
$$\mathbf{123432}\,0501564^2 + 1568732000^2 = \mathbf{1234321}\,498436^2 \quad (5.706)$$

$$0500151^2 + 1414000^2 \quad = \mathbf{1}\,499849^2$$
$$\mathbf{12}\,0500151^2 + 15554000^2 \quad = \mathbf{121}\,499849^2$$
$$\mathbf{1232}\,0500151^2 + 156954000^2 \ = \mathbf{12321}\,499849^2$$
$$\mathbf{123432}\,0500151^2 + 1570954000^2 = \mathbf{1234321}\,499849^2 \quad (5.707)$$

$$0498736^2 + 1416000^2 \quad = \mathbf{1}\,501264^2$$
$$\mathbf{12}\,0498736^2 + 15576000^2 \quad = \mathbf{121}\,501264^2$$
$$\mathbf{1232}\,0498736^2 + 157176000^2 \ = \mathbf{12321}\,501264^2$$
$$\mathbf{123432}\,0498736^2 + 1573176000^2 = \mathbf{1234321}\,501264^2 \quad (5.708)$$

$$0497319^2 + 1418000^2 \quad = \mathbf{1}\,502681^2$$
$$\mathbf{12}\,0497319^2 + 15598000^2 \quad = \mathbf{121}\,502681^2$$
$$\mathbf{1232}\,0497319^2 + 157398000^2 \ = \mathbf{12321}\,502681^2$$
$$\mathbf{123432}\,0497319^2 + 1575398000^2 = \mathbf{1234321}\,502681^2 \quad (5.709)$$

$$0495900^2 + 1420000^2 \quad = \mathbf{1}\,504100^2$$
$$\mathbf{12}\,0495900^2 + 15620000^2 \quad = \mathbf{121}\,504100^2$$
$$\mathbf{1232}\,0495900^2 + 157620000^2 \ = \mathbf{12321}\,504100^2$$
$$\mathbf{123432}\,0495900^2 + 1577620000^2 = \mathbf{1234321}\,504100^2 \quad (5.710)$$

$$0494479^2 + 1422000^2 \quad = \mathbf{1}\,505521^2$$
$$\mathbf{12}\,0494479^2 + 15642000^2 \quad = \mathbf{121}\,505521^2$$
$$\mathbf{1232}\,0494479^2 + 157842000^2 \ = \mathbf{12321}\,505521^2$$
$$\mathbf{123432}\,0494479^2 + 1579842000^2 = \mathbf{1234321}\,505521^2 \quad (5.711)$$

$$0493056^2 + 1424000^2 \quad = \mathbf{1}\,506944^2$$
$$\mathbf{12}\,0493056^2 + 15664000^2 \quad = \mathbf{121}\,506944^2$$
$$\mathbf{1232}\,0493056^2 + 158064000^2 \ = \mathbf{12321}\,506944^2$$
$$\mathbf{123432}\,0493056^2 + 1582064000^2 = \mathbf{1234321}\,506944^2 \quad (5.712)$$

$$0491631^2 + 1426000^2 \quad = \mathbf{1}\,508369^2$$
$$\mathbf{12}\,0491631^2 + 15686000^2 \quad = \mathbf{121}\,508369^2$$
$$\mathbf{1232}\,0491631^2 + 158286000^2 \ = \mathbf{12321}\,508369^2$$
$$\mathbf{123432}\,0491631^2 + 1584286000^2 = \mathbf{1234321}\,508369^2 \quad (5.713)$$

$0490204^2 + 1428000^2 \quad = \mathbf{1}\,509796^2$

$\mathbf{12}\,0490204^2 + 15708000^2 \quad = \mathbf{121}\,509796^2$

$\mathbf{1232}\,0490204^2 + 158508000^2 \quad = \mathbf{12321}\,509796^2$

$\mathbf{123432}\,0490204^2 + 1586508000^2 = \mathbf{1234321}\,509796^2 \quad (5.714)$

$0488775^2 + 1430000^2 \quad = \mathbf{1}\,511225^2$

$\mathbf{12}\,0488775^2 + 15730000^2 \quad = \mathbf{121}\,511225^2$

$\mathbf{1232}\,0488775^2 + 158730000^2 \quad = \mathbf{12321}\,511225^2$

$\mathbf{123432}\,0488775^2 + 1588730000^2 = \mathbf{1234321}\,511225^2 \quad (5.715)$

$0487344^2 + 1432000^2 \quad = \mathbf{1}\,512656^2$

$\mathbf{12}\,0487344^2 + 15752000^2 \quad = \mathbf{121}\,512656^2$

$\mathbf{1232}\,0487344^2 + 158952000^2 \quad = \mathbf{12321}\,512656^2$

$\mathbf{123432}\,0487344^2 + 1590952000^2 = \mathbf{1234321}\,512656^2 \quad (5.716)$

$0485911^2 + 1434000^2 \quad = \mathbf{1}\,514089^2$

$\mathbf{12}\,0485911^2 + 15774000^2 \quad = \mathbf{121}\,514089^2$

$\mathbf{1232}\,0485911^2 + 159174000^2 \quad = \mathbf{12321}\,514089^2$

$\mathbf{123432}\,0485911^2 + 1593174000^2 = \mathbf{1234321}\,514089^2 \quad (5.717)$

$0484476^2 + 1436000^2 \quad = \mathbf{1}\,515524^2$

$\mathbf{12}\,0484476^2 + 15796000^2 \quad = \mathbf{121}\,515524^2$

$\mathbf{1232}\,0484476^2 + 159396000^2 \quad = \mathbf{12321}\,515524^2$

$\mathbf{123432}\,0484476^2 + 1595396000^2 = \mathbf{1234321}\,515524^2 \quad (5.718)$

$0483039^2 + 1438000^2 \quad = \mathbf{1}\,516961^2$

$\mathbf{12}\,0483039^2 + 15818000^2 \quad = \mathbf{121}\,516961^2$

$\mathbf{1232}\,0483039^2 + 159618000^2 \quad = \mathbf{12321}\,516961^2$

$\mathbf{123432}\,0483039^2 + 1597618000^2 = \mathbf{1234321}\,516961^2 \quad (5.719)$

$0481600^2 + 1440000^2 \quad = \mathbf{1}\,518400^2$

$\mathbf{12}\,0481600^2 + 15840000^2 \quad = \mathbf{121}\,518400^2$

$\mathbf{1232}\,0481600^2 + 159840000^2 \quad = \mathbf{12321}\,518400^2$

$\mathbf{123432}\,0481600^2 + 1599840000^2 = \mathbf{1234321}\,518400^2 \quad (5.720)$

$0480159^2 + 1442000^2 \quad = \mathbf{1}\,519841^2$

$\mathbf{12}\,0480159^2 + 15862000^2 \quad = \mathbf{121}\,519841^2$

$\mathbf{1232}\,0480159^2 + 160062000^2 \quad = \mathbf{12321}\,519841^2$

$\mathbf{123432}\,0480159^2 + 1602062000^2 = \mathbf{1234321}\,519841^2 \quad (5.721)$

$0478716^2 + 1444000^2 \quad = \mathbf{1}\,521284^2$

$\mathbf{12}\,0478716^2 + 15884000^2 \quad = \mathbf{121}\,521284^2$

$\mathbf{1232}\,0478716^2 + 160284000^2 \quad = \mathbf{12321}\,521284^2$

$\mathbf{123432}\,0478716^2 + 1604284000^2 = \mathbf{1234321}\,521284^2 \quad (5.722)$

$0477271^2 + 1446000^2 \quad = \mathbf{1}\,522729^2$

$\mathbf{12}\,0477271^2 + 15906000^2 \quad = \mathbf{121}\,522729^2$

$\mathbf{1232}\,0477271^2 + 160506000^2 \quad = \mathbf{12321}\,522729^2$

$\mathbf{123432}\,0477271^2 + 1606506000^2 = \mathbf{1234321}\,522729^2 \quad (5.723)$

$0475824^2 + 1448000^2 \quad = \mathbf{1}\,524176^2$

$\mathbf{12}\,0475824^2 + 15928000^2 \quad = \mathbf{121}\,524176^2$

$\mathbf{1232}\,0475824^2 + 160728000^2 \quad = \mathbf{12321}\,524176^2$

$\mathbf{123432}\,0475824^2 + 1608728000^2 = \mathbf{1234321}\,524176^2 \quad (5.724)$

$0474375^2 + 1450000^2 \quad = \mathbf{1}\,525625^2$

$\mathbf{12}\,0474375^2 + 15950000^2 \quad = \mathbf{121}\,525625^2$

$\mathbf{1232}\,0474375^2 + 160950000^2 \quad = \mathbf{12321}\,525625^2$

$\mathbf{123432}\,0474375^2 + 1610950000^2 = \mathbf{1234321}\,525625^2 \quad (5.725)$

$0472924^2 + 1452000^2 \quad = \mathbf{1}\,527076^2$

$\mathbf{12}\,0472924^2 + 15972000^2 \quad = \mathbf{121}\,527076^2$

$\mathbf{1232}\,0472924^2 + 161172000^2 \quad = \mathbf{12321}\,527076^2$

$\mathbf{123432}\,0472924^2 + 1613172000^2 = \mathbf{1234321}\,527076^2 \quad (5.726)$

$0471471^2 + 1454000^2 \quad = \mathbf{1}\,528529^2$

$\mathbf{12}\,0471471^2 + 15994000^2 \quad = \mathbf{121}\,528529^2$

$\mathbf{1232}\,0471471^2 + 161394000^2 \quad = \mathbf{12321}\,528529^2$

$\mathbf{123432}\,0471471^2 + 1615394000^2 = \mathbf{1234321}\,528529^2 \quad (5.727)$

$0470016^2 + 1456000^2 \quad = \mathbf{1}\,529984^2$

$\mathbf{12}\,0470016^2 + 16016000^2 \quad = \mathbf{121}\,529984^2$

$\mathbf{1232}\,0470016^2 + 161616000^2 \quad = \mathbf{12321}\,529984^2$

$\mathbf{123432}\,0470016^2 + 1617616000^2 = \mathbf{1234321}\,529984^2 \quad (5.728)$

$0468559^2 + 1458000^2 \quad = \mathbf{1}\,531441^2$

$\mathbf{12}\,0468559^2 + 16038000^2 \quad = \mathbf{121}\,531441^2$

$\mathbf{1232}\,0468559^2 + 161838000^2 \quad = \mathbf{12321}\,531441^2$

$\mathbf{123432}\,0468559^2 + 1619838000^2 = \mathbf{1234321}\,531441^2 \quad (5.729)$

$0467100^2 + 1460000^2 \quad = \mathbf{1}\,532900^2$

$\mathbf{12}\,0467100^2 + 16060000^2 \quad = \mathbf{121}\,532900^2$

$\mathbf{1232}\,0467100^2 + 162060000^2 \quad = \mathbf{12321}\,532900^2$

$\mathbf{123432}\,0467100^2 + 1622060000^2 = \mathbf{1234321}\,532900^2 \quad (5.730)$

$$0465639^2 + 1462000^2 = \mathbf{1}\,534361^2$$
$$\mathbf{12}\,0465639^2 + 16082000^2 = \mathbf{121}\,534361^2$$
$$\mathbf{1232}\,0465639^2 + 162282000^2 = \mathbf{12321}\,534361^2$$
$$\mathbf{123432}\,0465639^2 + 1624282000^2 = \mathbf{1234321}\,534361^2 \quad (5.731)$$

$$0464176^2 + 1464000^2 = \mathbf{1}\,535824^2$$
$$\mathbf{12}\,0464176^2 + 16104000^2 = \mathbf{121}\,535824^2$$
$$\mathbf{1232}\,0464176^2 + 162504000^2 = \mathbf{12321}\,535824^2$$
$$\mathbf{123432}\,0464176^2 + 1626504000^2 = \mathbf{1234321}\,535824^2 \quad (5.732)$$

$$0462711^2 + 1466000^2 = \mathbf{1}\,537289^2$$
$$\mathbf{12}\,0462711^2 + 16126000^2 = \mathbf{121}\,537289^2$$
$$\mathbf{1232}\,0462711^2 + 162726000^2 = \mathbf{12321}\,537289^2$$
$$\mathbf{123432}\,0462711^2 + 1628726000^2 = \mathbf{1234321}\,537289^2 \quad (5.733)$$

$$0461244^2 + 1468000^2 = \mathbf{1}\,538756^2$$
$$\mathbf{12}\,0461244^2 + 16148000^2 = \mathbf{121}\,538756^2$$
$$\mathbf{1232}\,0461244^2 + 162948000^2 = \mathbf{12321}\,538756^2$$
$$\mathbf{123432}\,0461244^2 + 1630948000^2 = \mathbf{1234321}\,538756^2 \quad (5.734)$$

$$0459775^2 + 1470000^2 = \mathbf{1}\,540225^2$$
$$\mathbf{12}\,0459775^2 + 16170000^2 = \mathbf{121}\,540225^2$$
$$\mathbf{1232}\,0459775^2 + 163170000^2 = \mathbf{12321}\,540225^2$$
$$\mathbf{123432}\,0459775^2 + 1633170000^2 = \mathbf{1234321}\,540225^2 \quad (5.735)$$

$$0458304^2 + 1472000^2 = \mathbf{1}\,541696^2$$
$$\mathbf{12}\,0458304^2 + 16192000^2 = \mathbf{121}\,541696^2$$
$$\mathbf{1232}\,0458304^2 + 163392000^2 = \mathbf{12321}\,541696^2$$
$$\mathbf{123432}\,0458304^2 + 1635392000^2 = \mathbf{1234321}\,541696^2 \quad (5.736)$$

$$0456831^2 + 1474000^2 = \mathbf{1}\,543169^2$$
$$\mathbf{12}\,0456831^2 + 16214000^2 = \mathbf{121}\,543169^2$$
$$\mathbf{1232}\,0456831^2 + 163614000^2 = \mathbf{12321}\,543169^2$$
$$\mathbf{123432}\,0456831^2 + 1637614000^2 = \mathbf{1234321}\,543169^2 \quad (5.737)$$

$$0455356^2 + 1476000^2 = \mathbf{1}\,544644^2$$
$$\mathbf{12}\,0455356^2 + 16236000^2 = \mathbf{121}\,544644^2$$
$$\mathbf{1232}\,0455356^2 + 163836000^2 = \mathbf{12321}\,544644^2$$
$$\mathbf{123432}\,0455356^2 + 1639836000^2 = \mathbf{1234321}\,544644^2 \quad (5.738)$$

$$0453879^2 + 1478000^2 = \mathbf{1}\,546121^2$$
$$\mathbf{12}\,0453879^2 + 16258000^2 = \mathbf{121}\,546121^2$$
$$\mathbf{1232}\,0453879^2 + 164058000^2 = \mathbf{12321}\,546121^2$$
$$\mathbf{123432}\,0453879^2 + 1642058000^2 = \mathbf{1234321}\,546121^2 \quad (5.739)$$

$$0452400^2 + 1480000^2 = \mathbf{1}\,547600^2$$
$$\mathbf{12}\,0452400^2 + 16280000^2 = \mathbf{121}\,547600^2$$
$$\mathbf{1232}\,0452400^2 + 164280000^2 = \mathbf{12321}\,547600^2$$
$$\mathbf{123432}\,0452400^2 + 1644280000^2 = \mathbf{1234321}\,547600^2 \quad (5.740)$$

$$0450919^2 + 1482000^2 = \mathbf{1}\,549081^2$$
$$\mathbf{12}\,0450919^2 + 16302000^2 = \mathbf{121}\,549081^2$$
$$\mathbf{1232}\,0450919^2 + 164502000^2 = \mathbf{12321}\,549081^2$$
$$\mathbf{123432}\,0450919^2 + 1646502000^2 = \mathbf{1234321}\,549081^2 \quad (5.741)$$

$$0449436^2 + 1484000^2 = \mathbf{1}\,550564^2$$
$$\mathbf{12}\,0449436^2 + 16324000^2 = \mathbf{121}\,550564^2$$
$$\mathbf{1232}\,0449436^2 + 164724000^2 = \mathbf{12321}\,550564^2$$
$$\mathbf{123432}\,0449436^2 + 1648724000^2 = \mathbf{1234321}\,550564^2 \quad (5.742)$$

$$0447951^2 + 1486000^2 = \mathbf{1}\,552049^2$$
$$\mathbf{12}\,0447951^2 + 16346000^2 = \mathbf{121}\,552049^2$$
$$\mathbf{1232}\,0447951^2 + 164946000^2 = \mathbf{12321}\,552049^2$$
$$\mathbf{123432}\,0447951^2 + 1650946000^2 = \mathbf{1234321}\,552049^2 \quad (5.743)$$

$$0446464^2 + 1488000^2 = \mathbf{1}\,553536^2$$
$$\mathbf{12}\,0446464^2 + 16368000^2 = \mathbf{121}\,553536^2$$
$$\mathbf{1232}\,0446464^2 + 165168000^2 = \mathbf{12321}\,553536^2$$
$$\mathbf{123432}\,0446464^2 + 1653168000^2 = \mathbf{1234321}\,553536^2 \quad (5.744)$$

$$0444975^2 + 1490000^2 = \mathbf{1}\,555025^2$$
$$\mathbf{12}\,0444975^2 + 16390000^2 = \mathbf{121}\,555025^2$$
$$\mathbf{1232}\,0444975^2 + 165390000^2 = \mathbf{12321}\,555025^2$$
$$\mathbf{123432}\,0444975^2 + 1655390000^2 = \mathbf{1234321}\,555025^2 \quad (5.745)$$

$$0443484^2 + 1492000^2 = \mathbf{1}\,556516^2$$
$$\mathbf{12}\,0443484^2 + 16412000^2 = \mathbf{121}\,556516^2$$
$$\mathbf{1232}\,0443484^2 + 165612000^2 = \mathbf{12321}\,556516^2$$
$$\mathbf{123432}\,0443484^2 + 1657612000^2 = \mathbf{1234321}\,556516^2 \quad (5.746)$$

$$0441991^2 + 1494000^2 = \mathbf{1}\,558009^2$$
$$\mathbf{12}\,0441991^2 + 16434000^2 = \mathbf{121}\,558009^2$$
$$\mathbf{1232}\,0441991^2 + 165834000^2 = \mathbf{12321}\,558009^2$$
$$\mathbf{123432}\,0441991^2 + 1659834000^2 = \mathbf{1234321}\,558009^2 \quad (5.747)$$

$0440496^2 + 1496000^2 = \mathbf{1}559504^2$

$\mathbf{12}0440496^2 + 16456000^2 = \mathbf{121}559504^2$

$\mathbf{1232}0440496^2 + 166056000^2 = \mathbf{12321}559504^2$

$\mathbf{123432}0440496^2 + 1662056000^2 = \mathbf{1234321}559504^2 \quad (5.748)$

$0438999^2 + 1498000^2 = \mathbf{1}561001^2$

$\mathbf{12}0438999^2 + 16478000^2 = \mathbf{121}561001^2$

$\mathbf{1232}0438999^2 + 166278000^2 = \mathbf{12321}561001^2$

$\mathbf{123432}0438999^2 + 1664278000^2 = \mathbf{1234321}561001^2 \quad (5.749)$

$0437500^2 + 1500000^2 = \mathbf{1}562500^2$

$\mathbf{12}0437500^2 + 16500000^2 = \mathbf{121}562500^2$

$\mathbf{1232}0437500^2 + 166500000^2 = \mathbf{12321}562500^2$

$\mathbf{123432}0437500^2 + 1666500000^2 = \mathbf{1234321}562500^2 \quad (5.750)$

$0435999^2 + 1502000^2 = \mathbf{1}564001^2$

$\mathbf{12}0435999^2 + 16522000^2 = \mathbf{121}564001^2$

$\mathbf{1232}0435999^2 + 166722000^2 = \mathbf{12321}564001^2$

$\mathbf{123432}0435999^2 + 1668722000^2 = \mathbf{1234321}564001^2 \quad (5.751)$

$0434496^2 + 1504000^2 = \mathbf{1}565504^2$

$\mathbf{12}0434496^2 + 16544000^2 = \mathbf{121}565504^2$

$\mathbf{1232}0434496^2 + 166944000^2 = \mathbf{12321}565504^2$

$\mathbf{123432}0434496^2 + 1670944000^2 = \mathbf{1234321}565504^2 \quad (5.752)$

$0432991^2 + 1506000^2 = \mathbf{1}567009^2$

$\mathbf{12}0432991^2 + 16566000^2 = \mathbf{121}567009^2$

$\mathbf{1232}0432991^2 + 167166000^2 = \mathbf{12321}567009^2$

$\mathbf{123432}0432991^2 + 1673166000^2 = \mathbf{1234321}567009^2 \quad (5.753)$

$0431484^2 + 1508000^2 = \mathbf{1}568516^2$

$\mathbf{12}0431484^2 + 16588000^2 = \mathbf{121}568516^2$

$\mathbf{1232}0431484^2 + 167388000^2 = \mathbf{12321}568516^2$

$\mathbf{123432}0431484^2 + 1675388000^2 = \mathbf{1234321}568516^2 \quad (5.754)$

$0429975^2 + 1510000^2 = \mathbf{1}570025^2$

$\mathbf{12}0429975^2 + 16610000^2 = \mathbf{121}570025^2$

$\mathbf{1232}0429975^2 + 167610000^2 = \mathbf{12321}570025^2$

$\mathbf{123432}0429975^2 + 1677610000^2 = \mathbf{1234321}570025^2 \quad (5.755)$

$0428464^2 + 1512000^2 = \mathbf{1}571536^2$

$\mathbf{12}0428464^2 + 16632000^2 = \mathbf{121}571536^2$

$\mathbf{1232}0428464^2 + 167832000^2 = \mathbf{12321}571536^2$

$\mathbf{123432}0428464^2 + 1679832000^2 = \mathbf{1234321}571536^2 \quad (5.756)$

$0426951^2 + 1514000^2 = \mathbf{1}573049^2$

$\mathbf{12}0426951^2 + 16654000^2 = \mathbf{121}573049^2$

$\mathbf{1232}0426951^2 + 168054000^2 = \mathbf{12321}573049^2$

$\mathbf{123432}0426951^2 + 1682054000^2 = \mathbf{1234321}573049^2 \quad (5.757)$

$0425436^2 + 1516000^2 = \mathbf{1}574564^2$

$\mathbf{12}0425436^2 + 16676000^2 = \mathbf{121}574564^2$

$\mathbf{1232}0425436^2 + 168276000^2 = \mathbf{12321}574564^2$

$\mathbf{123432}0425436^2 + 1684276000^2 = \mathbf{1234321}574564^2 \quad (5.758)$

$0423919^2 + 1518000^2 = \mathbf{1}576081^2$

$\mathbf{12}0423919^2 + 16698000^2 = \mathbf{121}576081^2$

$\mathbf{1232}0423919^2 + 168498000^2 = \mathbf{12321}576081^2$

$\mathbf{123432}0423919^2 + 1686498000^2 = \mathbf{1234321}576081^2 \quad (5.759)$

$0422400^2 + 1520000^2 = \mathbf{1}577600^2$

$\mathbf{12}0422400^2 + 16720000^2 = \mathbf{121}577600^2$

$\mathbf{1232}0422400^2 + 168720000^2 = \mathbf{12321}577600^2$

$\mathbf{123432}0422400^2 + 1688720000^2 = \mathbf{1234321}577600^2 \quad (5.760)$

$0420879^2 + 1522000^2 = \mathbf{1}579121^2$

$\mathbf{12}0420879^2 + 16742000^2 = \mathbf{121}579121^2$

$\mathbf{1232}0420879^2 + 168942000^2 = \mathbf{12321}579121^2$

$\mathbf{123432}0420879^2 + 1690942000^2 = \mathbf{1234321}579121^2 \quad (5.761)$

$0419356^2 + 1524000^2 = \mathbf{1}580644^2$

$\mathbf{12}0419356^2 + 16764000^2 = \mathbf{121}580644^2$

$\mathbf{1232}0419356^2 + 169164000^2 = \mathbf{12321}580644^2$

$\mathbf{123432}0419356^2 + 1693164000^2 = \mathbf{1234321}580644^2 \quad (5.762)$

$0417831^2 + 1526000^2 = \mathbf{1}582169^2$

$\mathbf{12}0417831^2 + 16786000^2 = \mathbf{121}582169^2$

$\mathbf{1232}0417831^2 + 169386000^2 = \mathbf{12321}582169^2$

$\mathbf{123432}0417831^2 + 1695386000^2 = \mathbf{1234321}582169^2 \quad (5.763)$

$0416304^2 + 1528000^2 = \mathbf{1}583696^2$

$\mathbf{12}0416304^2 + 16808000^2 = \mathbf{121}583696^2$

$\mathbf{1232}0416304^2 + 169608000^2 = \mathbf{12321}583696^2$

$\mathbf{123432}0416304^2 + 1697608000^2 = \mathbf{1234321}583696^2 \quad (5.764)$

$0414775^2 + 1530000^2 = \mathbf{1}\,585225^2$

$\mathbf{12}\,0414775^2 + 16830000^2 = \mathbf{121}\,585225^2$

$\mathbf{1232}\,0414775^2 + 169830000^2 = \mathbf{12321}\,585225^2$

$\mathbf{123432}\,0414775^2 + 1699830000^2 = \mathbf{1234321}\,585225^2 \quad (5.765)$

$0413244^2 + 1532000^2 = \mathbf{1}\,586756^2$

$\mathbf{12}\,0413244^2 + 16852000^2 = \mathbf{121}\,586756^2$

$\mathbf{1232}\,0413244^2 + 170052000^2 = \mathbf{12321}\,586756^2$

$\mathbf{123432}\,0413244^2 + 1702052000^2 = \mathbf{1234321}\,586756^2 \quad (5.766)$

$0411711^2 + 1534000^2 = \mathbf{1}\,588289^2$

$\mathbf{12}\,0411711^2 + 16874000^2 = \mathbf{121}\,588289^2$

$\mathbf{1232}\,0411711^2 + 170274000^2 = \mathbf{12321}\,588289^2$

$\mathbf{123432}\,0411711^2 + 1704274000^2 = \mathbf{1234321}\,588289^2 \quad (5.767)$

$0410176^2 + 1536000^2 = \mathbf{1}\,589824^2$

$\mathbf{12}\,0410176^2 + 16896000^2 = \mathbf{121}\,589824^2$

$\mathbf{1232}\,0410176^2 + 170496000^2 = \mathbf{12321}\,589824^2$

$\mathbf{123432}\,0410176^2 + 1706496000^2 = \mathbf{1234321}\,589824^2 \quad (5.768)$

$0408639^2 + 1538000^2 = \mathbf{1}\,591361^2$

$\mathbf{12}\,0408639^2 + 16918000^2 = \mathbf{121}\,591361^2$

$\mathbf{1232}\,0408639^2 + 170718000^2 = \mathbf{12321}\,591361^2$

$\mathbf{123432}\,0408639^2 + 1708718000^2 = \mathbf{1234321}\,591361^2 \quad (5.769)$

$0407100^2 + 1540000^2 = \mathbf{1}\,592900^2$

$\mathbf{12}\,0407100^2 + 16940000^2 = \mathbf{121}\,592900^2$

$\mathbf{1232}\,0407100^2 + 170940000^2 = \mathbf{12321}\,592900^2$

$\mathbf{123432}\,0407100^2 + 1710940000^2 = \mathbf{1234321}\,592900^2 \quad (5.770)$

$0405559^2 + 1542000^2 = \mathbf{1}\,594441^2$

$\mathbf{12}\,0405559^2 + 16962000^2 = \mathbf{121}\,594441^2$

$\mathbf{1232}\,0405559^2 + 171162000^2 = \mathbf{12321}\,594441^2$

$\mathbf{123432}\,0405559^2 + 1713162000^2 = \mathbf{1234321}\,594441^2 \quad (5.771)$

$0404016^2 + 1544000^2 = \mathbf{1}\,595984^2$

$\mathbf{12}\,0404016^2 + 16984000^2 = \mathbf{121}\,595984^2$

$\mathbf{1232}\,0404016^2 + 171384000^2 = \mathbf{12321}\,595984^2$

$\mathbf{123432}\,0404016^2 + 1715384000^2 = \mathbf{1234321}\,595984^2 \quad (5.772)$

$0402471^2 + 1546000^2 = \mathbf{1}\,597529^2$

$\mathbf{12}\,0402471^2 + 17006000^2 = \mathbf{121}\,597529^2$

$\mathbf{1232}\,0402471^2 + 171606000^2 = \mathbf{12321}\,597529^2$

$\mathbf{123432}\,0402471^2 + 1717606000^2 = \mathbf{1234321}\,597529^2 \quad (5.773)$

$0400924^2 + 1548000^2 = \mathbf{1}\,599076^2$

$\mathbf{12}\,0400924^2 + 17028000^2 = \mathbf{121}\,599076^2$

$\mathbf{1232}\,0400924^2 + 171828000^2 = \mathbf{12321}\,599076^2$

$\mathbf{123432}\,0400924^2 + 1719828000^2 = \mathbf{1234321}\,599076^2 \quad (5.774)$

$0399375^2 + 1550000^2 = \mathbf{1}\,600625^2$

$\mathbf{12}\,0399375^2 + 17050000^2 = \mathbf{121}\,600625^2$

$\mathbf{1232}\,0399375^2 + 172050000^2 = \mathbf{12321}\,600625^2$

$\mathbf{123432}\,0399375^2 + 1722050000^2 = \mathbf{1234321}\,600625^2 \quad (5.775)$

$0397824^2 + 1552000^2 = \mathbf{1}\,602176^2$

$\mathbf{12}\,0397824^2 + 17072000^2 = \mathbf{121}\,602176^2$

$\mathbf{1232}\,0397824^2 + 172272000^2 = \mathbf{12321}\,602176^2$

$\mathbf{123432}\,0397824^2 + 1724272000^2 = \mathbf{1234321}\,602176^2 \quad (5.776)$

$0396271^2 + 1554000^2 = \mathbf{1}\,603729^2$

$\mathbf{12}\,0396271^2 + 17094000^2 = \mathbf{121}\,603729^2$

$\mathbf{1232}\,0396271^2 + 172494000^2 = \mathbf{12321}\,603729^2$

$\mathbf{123432}\,0396271^2 + 1726494000^2 = \mathbf{1234321}\,603729^2 \quad (5.777)$

$0394716^2 + 1556000^2 = \mathbf{1}\,605284^2$

$\mathbf{12}\,0394716^2 + 17116000^2 = \mathbf{121}\,605284^2$

$\mathbf{1232}\,0394716^2 + 172716000^2 = \mathbf{12321}\,605284^2$

$\mathbf{123432}\,0394716^2 + 1728716000^2 = \mathbf{1234321}\,605284^2 \quad (5.778)$

$0393159^2 + 1558000^2 = \mathbf{1}\,606841^2$

$\mathbf{12}\,0393159^2 + 17138000^2 = \mathbf{121}\,606841^2$

$\mathbf{1232}\,0393159^2 + 172938000^2 = \mathbf{12321}\,606841^2$

$\mathbf{123432}\,0393159^2 + 1730938000^2 = \mathbf{1234321}\,606841^2 \quad (5.779)$

$0391600^2 + 1560000^2 = \mathbf{1}\,608400^2$

$\mathbf{12}\,0391600^2 + 17160000^2 = \mathbf{121}\,608400^2$

$\mathbf{1232}\,0391600^2 + 173160000^2 = \mathbf{12321}\,608400^2$

$\mathbf{123432}\,0391600^2 + 1733160000^2 = \mathbf{1234321}\,608400^2 \quad (5.780)$

$0390039^2 + 1562000^2 = \mathbf{1}\,609961^2$

$\mathbf{12}\,0390039^2 + 17182000^2 = \mathbf{121}\,609961^2$

$\mathbf{1232}\,0390039^2 + 173382000^2 = \mathbf{12321}\,609961^2$

$\mathbf{123432}\,0390039^2 + 1735382000^2 = \mathbf{1234321}\,609961^2 \quad (5.781)$

$0388476^2 + 1564000^2 \quad = \mathbf{1}\,611524^2$

$\mathbf{12}\,0388476^2 + 17204000^2 \quad = \mathbf{121}\,611524^2$

$\mathbf{1232}\,0388476^2 + 173604000^2 = \mathbf{12321}\,611524^2$

$\mathbf{123432}\,0388476^2 + 1737604000^2 = \mathbf{1234321}\,611524^2 \quad (5.782)$

$0386911^2 + 1566000^2 \quad = \mathbf{1}\,613089^2$

$\mathbf{12}\,0386911^2 + 17226000^2 \quad = \mathbf{121}\,613089^2$

$\mathbf{1232}\,0386911^2 + 173826000^2 = \mathbf{12321}\,613089^2$

$\mathbf{123432}\,0386911^2 + 1739826000^2 = \mathbf{1234321}\,613089^2 \quad (5.783)$

$0385344^2 + 1568000^2 \quad = \mathbf{1}\,614656^2$

$\mathbf{12}\,0385344^2 + 17248000^2 \quad = \mathbf{121}\,614656^2$

$\mathbf{1232}\,0385344^2 + 174048000^2 = \mathbf{12321}\,614656^2$

$\mathbf{123432}\,0385344^2 + 1742048000^2 = \mathbf{1234321}\,614656^2 \quad (5.784)$

$0383775^2 + 1570000^2 \quad = \mathbf{1}\,616225^2$

$\mathbf{12}\,0383775^2 + 17270000^2 \quad = \mathbf{121}\,616225^2$

$\mathbf{1232}\,0383775^2 + 174270000^2 = \mathbf{12321}\,616225^2$

$\mathbf{123432}\,0383775^2 + 1744270000^2 = \mathbf{1234321}\,616225^2 \quad (5.785)$

$0382204^2 + 1572000^2 \quad = \mathbf{1}\,617796^2$

$\mathbf{12}\,0382204^2 + 17292000^2 \quad = \mathbf{121}\,617796^2$

$\mathbf{1232}\,0382204^2 + 174492000^2 = \mathbf{12321}\,617796^2$

$\mathbf{123432}\,0382204^2 + 1746492000^2 = \mathbf{1234321}\,617796^2 \quad (5.786)$

$0380631^2 + 1574000^2 \quad = \mathbf{1}\,619369^2$

$\mathbf{12}\,0380631^2 + 17314000^2 \quad = \mathbf{121}\,619369^2$

$\mathbf{1232}\,0380631^2 + 174714000^2 = \mathbf{12321}\,619369^2$

$\mathbf{123432}\,0380631^2 + 1748714000^2 = \mathbf{1234321}\,619369^2 \quad (5.787)$

$0379056^2 + 1576000^2 \quad = \mathbf{1}\,620944^2$

$\mathbf{12}\,0379056^2 + 17336000^2 \quad = \mathbf{121}\,620944^2$

$\mathbf{1232}\,0379056^2 + 174936000^2 = \mathbf{12321}\,620944^2$

$\mathbf{123432}\,0379056^2 + 1750936000^2 = \mathbf{1234321}\,620944^2 \quad (5.788)$

$0377479^2 + 1578000^2 \quad = \mathbf{1}\,622521^2$

$\mathbf{12}\,0377479^2 + 17358000^2 \quad = \mathbf{121}\,622521^2$

$\mathbf{1232}\,0377479^2 + 175158000^2 = \mathbf{12321}\,622521^2$

$\mathbf{123432}\,0377479^2 + 1753158000^2 = \mathbf{1234321}\,622521^2 \quad (5.789)$

$0375900^2 + 1580000^2 \quad = \mathbf{1}\,624100^2$

$\mathbf{12}\,0375900^2 + 17380000^2 \quad = \mathbf{121}\,624100^2$

$\mathbf{1232}\,0375900^2 + 175380000^2 = \mathbf{12321}\,624100^2$

$\mathbf{123432}\,0375900^2 + 1755380000^2 = \mathbf{1234321}\,624100^2 \quad (5.790)$

$0374319^2 + 1582000^2 \quad = \mathbf{1}\,625681^2$

$\mathbf{12}\,0374319^2 + 17402000^2 \quad = \mathbf{121}\,625681^2$

$\mathbf{1232}\,0374319^2 + 175602000^2 = \mathbf{12321}\,625681^2$

$\mathbf{123432}\,0374319^2 + 1757602000^2 = \mathbf{1234321}\,625681^2 \quad (5.791)$

$0372736^2 + 1584000^2 \quad = \mathbf{1}\,627264^2$

$\mathbf{12}\,0372736^2 + 17424000^2 \quad = \mathbf{121}\,627264^2$

$\mathbf{1232}\,0372736^2 + 175824000^2 = \mathbf{12321}\,627264^2$

$\mathbf{123432}\,0372736^2 + 1759824000^2 = \mathbf{1234321}\,627264^2 \quad (5.792)$

$0371151^2 + 1586000^2 \quad = \mathbf{1}\,628849^2$

$\mathbf{12}\,0371151^2 + 17446000^2 \quad = \mathbf{121}\,628849^2$

$\mathbf{1232}\,0371151^2 + 176046000^2 = \mathbf{12321}\,628849^2$

$\mathbf{123432}\,0371151^2 + 1762046000^2 = \mathbf{1234321}\,628849^2 \quad (5.793)$

$0369564^2 + 1588000^2 \quad = \mathbf{1}\,630436^2$

$\mathbf{12}\,0369564^2 + 17468000^2 \quad = \mathbf{121}\,630436^2$

$\mathbf{1232}\,0369564^2 + 176268000^2 = \mathbf{12321}\,630436^2$

$\mathbf{123432}\,0369564^2 + 1764268000^2 = \mathbf{1234321}\,630436^2 \quad (5.794)$

$0367975^2 + 1590000^2 \quad = \mathbf{1}\,632025^2$

$\mathbf{12}\,0367975^2 + 17490000^2 \quad = \mathbf{121}\,632025^2$

$\mathbf{1232}\,0367975^2 + 176490000^2 = \mathbf{12321}\,632025^2$

$\mathbf{123432}\,0367975^2 + 1766490000^2 = \mathbf{1234321}\,632025^2 \quad (5.795)$

$0366384^2 + 1592000^2 \quad = \mathbf{1}\,633616^2$

$\mathbf{12}\,0366384^2 + 17512000^2 \quad = \mathbf{121}\,633616^2$

$\mathbf{1232}\,0366384^2 + 176712000^2 = \mathbf{12321}\,633616^2$

$\mathbf{123432}\,0366384^2 + 1768712000^2 = \mathbf{1234321}\,633616^2 \quad (5.796)$

$0364791^2 + 1594000^2 \quad = \mathbf{1}\,635209^2$

$\mathbf{12}\,0364791^2 + 17534000^2 \quad = \mathbf{121}\,635209^2$

$\mathbf{1232}\,0364791^2 + 176934000^2 = \mathbf{12321}\,635209^2$

$\mathbf{123432}\,0364791^2 + 1770934000^2 = \mathbf{1234321}\,635209^2 \quad (5.797)$

$0363196^2 + 1596000^2 \quad = \mathbf{1}\,636804^2$

$\mathbf{12}\,0363196^2 + 17556000^2 \quad = \mathbf{121}\,636804^2$

$\mathbf{1232}\,0363196^2 + 177156000^2 = \mathbf{12321}\,636804^2$

$\mathbf{123432}\,0363196^2 + 1773156000^2 = \mathbf{1234321}\,636804^2 \quad (5.798)$

$0361599^2 + 1598000^2 \quad = \mathbf{1}\,638401^2$

$\mathbf{12}\,0361599^2 + 17578000^2 \quad = \mathbf{121}\,638401^2$

$\mathbf{1232}\,0361599^2 + 177378000^2 = \mathbf{12321}\,638401^2$

$\mathbf{123432}\,0361599^2 + 1775378000^2 = \mathbf{1234321}\,638401^2 \quad (5.799)$

5.9 For $n = 800,\ 801,\ 801,\ ...,897,\ 898,\ 899:$

Let's consider

$m = 1000,\ 11000,\ 111000,\ 1111000,\ 11111000,\ 111111000,\ 1111111000,\ 11111111000,\ 111111111000$

in (1.1), then for each value of $n = 800,\ 801,\ 801,\ ...,897,\ 898,\ 899$; there are 100 *palindromic-type pandigital Pythagorean patterns* given below. In each case, only first four values are written. The other 5 values can be written on similar lines as done in subsection 5.1.1.

$$0360000^2 + 1600000^2 = \mathbf{1}\,640000^2$$
$$\mathbf{12}\,0360000^2 + 17600000^2 = \mathbf{121}\,640000^2$$
$$\mathbf{1232}\,0360000^2 + 177600000^2 = \mathbf{12321}\,640000^2$$
$$\mathbf{123432}\,0360000^2 + 1777600000^2 = \mathbf{1234321}\,640000^2 \quad (5.800)$$

$$0348751^2 + 1614000^2 = \mathbf{1}\,651249^2$$
$$\mathbf{12}\,0348751^2 + 17754000^2 = \mathbf{121}\,651249^2$$
$$\mathbf{1232}\,0348751^2 + 179154000^2 = \mathbf{12321}\,651249^2$$
$$\mathbf{123432}\,0348751^2 + 1793154000^2 = \mathbf{1234321}\,651249^2 \quad (5.807)$$

$$0358399^2 + 1602000^2 = \mathbf{1}\,641601^2$$
$$\mathbf{12}\,0358399^2 + 17622000^2 = \mathbf{121}\,641601^2$$
$$\mathbf{1232}\,0358399^2 + 177822000^2 = \mathbf{12321}\,641601^2$$
$$\mathbf{123432}\,0358399^2 + 1779822000^2 = \mathbf{1234321}\,641601^2 \quad (5.801)$$

$$0347136^2 + 1616000^2 = \mathbf{1}\,652864^2$$
$$\mathbf{12}\,0347136^2 + 17776000^2 = \mathbf{121}\,652864^2$$
$$\mathbf{1232}\,0347136^2 + 179376000^2 = \mathbf{12321}\,652864^2$$
$$\mathbf{123432}\,0347136^2 + 1795376000^2 = \mathbf{1234321}\,652864^2 \quad (5.808)$$

$$0356796^2 + 1604000^2 = \mathbf{1}\,643204^2$$
$$\mathbf{12}\,0356796^2 + 17644000^2 = \mathbf{121}\,643204^2$$
$$\mathbf{1232}\,0356796^2 + 178044000^2 = \mathbf{12321}\,643204^2$$
$$\mathbf{123432}\,0356796^2 + 1782044000^2 = \mathbf{1234321}\,643204^2 \quad (5.802)$$

$$0345519^2 + 1618000^2 = \mathbf{1}\,654481^2$$
$$\mathbf{12}\,0345519^2 + 17798000^2 = \mathbf{121}\,654481^2$$
$$\mathbf{1232}\,0345519^2 + 179598000^2 = \mathbf{12321}\,654481^2$$
$$\mathbf{123432}\,0345519^2 + 1797598000^2 = \mathbf{1234321}\,654481^2 \quad (5.809)$$

$$0355191^2 + 1606000^2 = \mathbf{1}\,644809^2$$
$$\mathbf{12}\,0355191^2 + 17666000^2 = \mathbf{121}\,644809^2$$
$$\mathbf{1232}\,0355191^2 + 178266000^2 = \mathbf{12321}\,644809^2$$
$$\mathbf{123432}\,0355191^2 + 1784266000^2 = \mathbf{1234321}\,644809^2 \quad (5.803)$$

$$0343900^2 + 1620000^2 = \mathbf{1}\,656100^2$$
$$\mathbf{12}\,0343900^2 + 17820000^2 = \mathbf{121}\,656100^2$$
$$\mathbf{1232}\,0343900^2 + 179820000^2 = \mathbf{12321}\,656100^2$$
$$\mathbf{123432}\,0343900^2 + 1799820000^2 = \mathbf{1234321}\,656100^2 \quad (5.810)$$

$$0353584^2 + 1608000^2 = \mathbf{1}\,646416^2$$
$$\mathbf{12}\,0353584^2 + 17688000^2 = \mathbf{121}\,646416^2$$
$$\mathbf{1232}\,0353584^2 + 178488000^2 = \mathbf{12321}\,646416^2$$
$$\mathbf{123432}\,0353584^2 + 1786488000^2 = \mathbf{1234321}\,646416^2 \quad (5.804)$$

$$0342279^2 + 1622000^2 = \mathbf{1}\,657721^2$$
$$\mathbf{12}\,0342279^2 + 17842000^2 = \mathbf{121}\,657721^2$$
$$\mathbf{1232}\,0342279^2 + 180042000^2 = \mathbf{12321}\,657721^2$$
$$\mathbf{123432}\,0342279^2 + 1802042000^2 = \mathbf{1234321}\,657721^2 \quad (5.811)$$

$$0351975^2 + 1610000^2 = \mathbf{1}\,648025^2$$
$$\mathbf{12}\,0351975^2 + 17710000^2 = \mathbf{121}\,648025^2$$
$$\mathbf{1232}\,0351975^2 + 178710000^2 = \mathbf{12321}\,648025^2$$
$$\mathbf{123432}\,0351975^2 + 1788710000^2 = \mathbf{1234321}\,648025^2 \quad (5.805)$$

$$0340656^2 + 1624000^2 = \mathbf{1}\,659344^2$$
$$\mathbf{12}\,0340656^2 + 17864000^2 = \mathbf{121}\,659344^2$$
$$\mathbf{1232}\,0340656^2 + 180264000^2 = \mathbf{12321}\,659344^2$$
$$\mathbf{123432}\,0340656^2 + 1804264000^2 = \mathbf{1234321}\,659344^2 \quad (5.812)$$

$$0350364^2 + 1612000^2 = \mathbf{1}\,649636^2$$
$$\mathbf{12}\,0350364^2 + 17732000^2 = \mathbf{121}\,649636^2$$
$$\mathbf{1232}\,0350364^2 + 178932000^2 = \mathbf{12321}\,649636^2$$
$$\mathbf{123432}\,0350364^2 + 1790932000^2 = \mathbf{1234321}\,649636^2 \quad (5.806)$$

$$0339031^2 + 1626000^2 = \mathbf{1}\,660969^2$$
$$\mathbf{12}\,0339031^2 + 17886000^2 = \mathbf{121}\,660969^2$$
$$\mathbf{1232}\,0339031^2 + 180486000^2 = \mathbf{12321}\,660969^2$$
$$\mathbf{123432}\,0339031^2 + 1806486000^2 = \mathbf{1234321}\,660969^2 \quad (5.813)$$

$$0337404^2 + 1628000^2 = \mathbf{1}\,662596^2$$
$$\mathbf{12}\,0337404^2 + 17908000^2 = \mathbf{121}\,662596^2$$
$$\mathbf{1232}\,0337404^2 + 180708000^2 = \mathbf{12321}\,662596^2$$
$$\mathbf{123432}\,0337404^2 + 1808708000^2 = \mathbf{1234321}\,662596^2 \quad (5.814)$$

$$0335775^2 + 1630000^2 = \mathbf{1}\,664225^2$$
$$\mathbf{12}\,0335775^2 + 17930000^2 = \mathbf{121}\,664225^2$$
$$\mathbf{1232}\,0335775^2 + 180930000^2 = \mathbf{12321}\,664225^2$$
$$\mathbf{123432}\,0335775^2 + 1810930000^2 = \mathbf{1234321}\,664225^2 \quad (5.815)$$

$$0334144^2 + 1632000^2 = \mathbf{1}\,665856^2$$
$$\mathbf{12}\,0334144^2 + 17952000^2 = \mathbf{121}\,665856^2$$
$$\mathbf{1232}\,0334144^2 + 181152000^2 = \mathbf{12321}\,665856^2$$
$$\mathbf{123432}\,0334144^2 + 1813152000^2 = \mathbf{1234321}\,665856^2 \quad (5.816)$$

$$0332511^2 + 1634000^2 = \mathbf{1}\,667489^2$$
$$\mathbf{12}\,0332511^2 + 17974000^2 = \mathbf{121}\,667489^2$$
$$\mathbf{1232}\,0332511^2 + 181374000^2 = \mathbf{12321}\,667489^2$$
$$\mathbf{123432}\,0332511^2 + 1815374000^2 = \mathbf{1234321}\,667489^2 \quad (5.817)$$

$$0330876^2 + 1636000^2 = \mathbf{1}\,669124^2$$
$$\mathbf{12}\,0330876^2 + 17996000^2 = \mathbf{121}\,669124^2$$
$$\mathbf{1232}\,0330876^2 + 181596000^2 = \mathbf{12321}\,669124^2$$
$$\mathbf{123432}\,0330876^2 + 1817596000^2 = \mathbf{1234321}\,669124^2 \quad (5.818)$$

$$0329239^2 + 1638000^2 = \mathbf{1}\,670761^2$$
$$\mathbf{12}\,0329239^2 + 18018000^2 = \mathbf{121}\,670761^2$$
$$\mathbf{1232}\,0329239^2 + 181818000^2 = \mathbf{12321}\,670761^2$$
$$\mathbf{123432}\,0329239^2 + 1819818000^2 = \mathbf{1234321}\,670761^2 \quad (5.819)$$

$$0327600^2 + 1640000^2 = \mathbf{1}\,672400^2$$
$$\mathbf{12}\,0327600^2 + 18040000^2 = \mathbf{121}\,672400^2$$
$$\mathbf{1232}\,0327600^2 + 182040000^2 = \mathbf{12321}\,672400^2$$
$$\mathbf{123432}\,0327600^2 + 1822040000^2 = \mathbf{1234321}\,672400^2 \quad (5.820)$$

$$0325959^2 + 1642000^2 = \mathbf{1}\,674041^2$$
$$\mathbf{12}\,0325959^2 + 18062000^2 = \mathbf{121}\,674041^2$$
$$\mathbf{1232}\,0325959^2 + 182262000^2 = \mathbf{12321}\,674041^2$$
$$\mathbf{123432}\,0325959^2 + 1824262000^2 = \mathbf{1234321}\,674041^2 \quad (5.821)$$

$$0324316^2 + 1644000^2 = \mathbf{1}\,675684^2$$
$$\mathbf{12}\,0324316^2 + 18084000^2 = \mathbf{121}\,675684^2$$
$$\mathbf{1232}\,0324316^2 + 182484000^2 = \mathbf{12321}\,675684^2$$
$$\mathbf{123432}\,0324316^2 + 1826484000^2 = \mathbf{1234321}\,675684^2 \quad (5.822)$$

$$0322671^2 + 1646000^2 = \mathbf{1}\,677329^2$$
$$\mathbf{12}\,0322671^2 + 18106000^2 = \mathbf{121}\,677329^2$$
$$\mathbf{1232}\,0322671^2 + 182706000^2 = \mathbf{12321}\,677329^2$$
$$\mathbf{123432}\,0322671^2 + 1828706000^2 = \mathbf{1234321}\,677329^2 \quad (5.823)$$

$$0321024^2 + 1648000^2 = \mathbf{1}\,678976^2$$
$$\mathbf{12}\,0321024^2 + 18128000^2 = \mathbf{121}\,678976^2$$
$$\mathbf{1232}\,0321024^2 + 182928000^2 = \mathbf{12321}\,678976^2$$
$$\mathbf{123432}\,0321024^2 + 1830928000^2 = \mathbf{1234321}\,678976^2 \quad (5.824)$$

$$0319375^2 + 1650000^2 = \mathbf{1}\,680625^2$$
$$\mathbf{12}\,0319375^2 + 18150000^2 = \mathbf{121}\,680625^2$$
$$\mathbf{1232}\,0319375^2 + 183150000^2 = \mathbf{12321}\,680625^2$$
$$\mathbf{123432}\,0319375^2 + 1833150000^2 = \mathbf{1234321}\,680625^2 \quad (5.825)$$

$$0317724^2 + 1652000^2 = \mathbf{1}\,682276^2$$
$$\mathbf{12}\,0317724^2 + 18172000^2 = \mathbf{121}\,682276^2$$
$$\mathbf{1232}\,0317724^2 + 183372000^2 = \mathbf{12321}\,682276^2$$
$$\mathbf{123432}\,0317724^2 + 1835372000^2 = \mathbf{1234321}\,682276^2 \quad (5.826)$$

$$0316071^2 + 1654000^2 = \mathbf{1}\,683929^2$$
$$\mathbf{12}\,0316071^2 + 18194000^2 = \mathbf{121}\,683929^2$$
$$\mathbf{1232}\,0316071^2 + 183594000^2 = \mathbf{12321}\,683929^2$$
$$\mathbf{123432}\,0316071^2 + 1837594000^2 = \mathbf{1234321}\,683929^2 \quad (5.827)$$

$$0314416^2 + 1656000^2 = \mathbf{1}\,685584^2$$
$$\mathbf{12}\,0314416^2 + 18216000^2 = \mathbf{121}\,685584^2$$
$$\mathbf{1232}\,0314416^2 + 183816000^2 = \mathbf{12321}\,685584^2$$
$$\mathbf{123432}\,0314416^2 + 1839816000^2 = \mathbf{1234321}\,685584^2 \quad (5.828)$$

$$0312759^2 + 1658000^2 = \mathbf{1}\,687241^2$$
$$\mathbf{12}\,0312759^2 + 18238000^2 = \mathbf{121}\,687241^2$$
$$\mathbf{1232}\,0312759^2 + 184038000^2 = \mathbf{12321}\,687241^2$$
$$\mathbf{123432}\,0312759^2 + 1842038000^2 = \mathbf{1234321}\,687241^2 \quad (5.829)$$

$$0311100^2 + 1660000^2 = \mathbf{1}\,688900^2$$
$$\mathbf{12}\,0311100^2 + 18260000^2 = \mathbf{121}\,688900^2$$
$$\mathbf{1232}\,0311100^2 + 184260000^2 = \mathbf{12321}\,688900^2$$
$$\mathbf{123432}\,0311100^2 + 1844260000^2 = \mathbf{1234321}\,688900^2 \quad (5.830)$$

$0309439^2 + 1662000^2 = \mathbf{1}\,690561^2$

$\mathbf{12}\,0309439^2 + 18282000^2 = \mathbf{121}\,690561^2$

$\mathbf{1232}\,0309439^2 + 184482000^2 = \mathbf{12321}\,690561^2$

$\mathbf{123432}\,0309439^2 + 1846482000^2 = \mathbf{1234321}\,690561^2$ (5.831)

$0307776^2 + 1664000^2 = \mathbf{1}\,692224^2$

$\mathbf{12}\,0307776^2 + 18304000^2 = \mathbf{121}\,692224^2$

$\mathbf{1232}\,0307776^2 + 184704000^2 = \mathbf{12321}\,692224^2$

$\mathbf{123432}\,0307776^2 + 1848704000^2 = \mathbf{1234321}\,692224^2$ (5.832)

$0306111^2 + 1666000^2 = \mathbf{1}\,693889^2$

$\mathbf{12}\,0306111^2 + 18326000^2 = \mathbf{121}\,693889^2$

$\mathbf{1232}\,0306111^2 + 184926000^2 = \mathbf{12321}\,693889^2$

$\mathbf{123432}\,0306111^2 + 1850926000^2 = \mathbf{1234321}\,693889^2$ (5.833)

$0304444^2 + 1668000^2 = \mathbf{1}\,695556^2$

$\mathbf{12}\,0304444^2 + 18348000^2 = \mathbf{121}\,695556^2$

$\mathbf{1232}\,0304444^2 + 185148000^2 = \mathbf{12321}\,695556^2$

$\mathbf{123432}\,0304444^2 + 1853148000^2 = \mathbf{1234321}\,695556^2$ (5.834)

$0302775^2 + 1670000^2 = \mathbf{1}\,697225^2$

$\mathbf{12}\,0302775^2 + 18370000^2 = \mathbf{121}\,697225^2$

$\mathbf{1232}\,0302775^2 + 185370000^2 = \mathbf{12321}\,697225^2$

$\mathbf{123432}\,0302775^2 + 1855370000^2 = \mathbf{1234321}\,697225^2$ (5.835)

$0301104^2 + 1672000^2 = \mathbf{1}\,698896^2$

$\mathbf{12}\,0301104^2 + 18392000^2 = \mathbf{121}\,698896^2$

$\mathbf{1232}\,0301104^2 + 185592000^2 = \mathbf{12321}\,698896^2$

$\mathbf{123432}\,0301104^2 + 1857592000^2 = \mathbf{1234321}\,698896^2$ (5.836)

$0299431^2 + 1674000^2 = \mathbf{1}\,700569^2$

$\mathbf{12}\,0299431^2 + 18414000^2 = \mathbf{121}\,700569^2$

$\mathbf{1232}\,0299431^2 + 185814000^2 = \mathbf{12321}\,700569^2$

$\mathbf{123432}\,0299431^2 + 1859814000^2 = \mathbf{1234321}\,700569^2$ (5.837)

$0297756^2 + 1676000^2 = \mathbf{1}\,702244^2$

$\mathbf{12}\,0297756^2 + 18436000^2 = \mathbf{121}\,702244^2$

$\mathbf{1232}\,0297756^2 + 186036000^2 = \mathbf{12321}\,702244^2$

$\mathbf{123432}\,0297756^2 + 1862036000^2 = \mathbf{1234321}\,702244^2$ (5.838)

$0296079^2 + 1678000^2 = \mathbf{1}\,703921^2$

$\mathbf{12}\,0296079^2 + 18458000^2 = \mathbf{121}\,703921^2$

$\mathbf{1232}\,0296079^2 + 186258000^2 = \mathbf{12321}\,703921^2$

$\mathbf{123432}\,0296079^2 + 1864258000^2 = \mathbf{1234321}\,703921^2$ (5.839)

$0294400^2 + 1680000^2 = \mathbf{1}\,705600^2$

$\mathbf{12}\,0294400^2 + 18480000^2 = \mathbf{121}\,705600^2$

$\mathbf{1232}\,0294400^2 + 186480000^2 = \mathbf{12321}\,705600^2$

$\mathbf{123432}\,0294400^2 + 1866480000^2 = \mathbf{1234321}\,705600^2$ (5.840)

$0292719^2 + 1682000^2 = \mathbf{1}\,707281^2$

$\mathbf{12}\,0292719^2 + 18502000^2 = \mathbf{121}\,707281^2$

$\mathbf{1232}\,0292719^2 + 186702000^2 = \mathbf{12321}\,707281^2$

$\mathbf{123432}\,0292719^2 + 1868702000^2 = \mathbf{1234321}\,707281^2$ (5.841)

$0291036^2 + 1684000^2 = \mathbf{1}\,708964^2$

$\mathbf{12}\,0291036^2 + 18524000^2 = \mathbf{121}\,708964^2$

$\mathbf{1232}\,0291036^2 + 186924000^2 = \mathbf{12321}\,708964^2$

$\mathbf{123432}\,0291036^2 + 1870924000^2 = \mathbf{1234321}\,708964^2$ (5.842)

$0289351^2 + 1686000^2 = \mathbf{1}\,710649^2$

$\mathbf{12}\,0289351^2 + 18546000^2 = \mathbf{121}\,710649^2$

$\mathbf{1232}\,0289351^2 + 187146000^2 = \mathbf{12321}\,710649^2$

$\mathbf{123432}\,0289351^2 + 1873146000^2 = \mathbf{1234321}\,710649^2$ (5.843)

$0287664^2 + 1688000^2 = \mathbf{1}\,712336^2$

$\mathbf{12}\,0287664^2 + 18568000^2 = \mathbf{121}\,712336^2$

$\mathbf{1232}\,0287664^2 + 187368000^2 = \mathbf{12321}\,712336^2$

$\mathbf{123432}\,0287664^2 + 1875368000^2 = \mathbf{1234321}\,712336^2$ (5.844)

$0285975^2 + 1690000^2 = \mathbf{1}\,714025^2$

$\mathbf{12}\,0285975^2 + 18590000^2 = \mathbf{121}\,714025^2$

$\mathbf{1232}\,0285975^2 + 187590000^2 = \mathbf{12321}\,714025^2$

$\mathbf{123432}\,0285975^2 + 1877590000^2 = \mathbf{1234321}\,714025^2$ (5.845)

$0284284^2 + 1692000^2 = \mathbf{1}\,715716^2$

$\mathbf{12}\,0284284^2 + 18612000^2 = \mathbf{121}\,715716^2$

$\mathbf{1232}\,0284284^2 + 187812000^2 = \mathbf{12321}\,715716^2$

$\mathbf{123432}\,0284284^2 + 1879812000^2 = \mathbf{1234321}\,715716^2$ (5.846)

$0282591^2 + 1694000^2 = \mathbf{1}\,717409^2$

$\mathbf{12}\,0282591^2 + 18634000^2 = \mathbf{121}\,717409^2$

$\mathbf{1232}\,0282591^2 + 188034000^2 = \mathbf{12321}\,717409^2$

$\mathbf{123432}\,0282591^2 + 1882034000^2 = \mathbf{1234321}\,717409^2$ (5.847)

$0280896^2 + 1696000^2 \quad = \mathbf{1}719104^2$

$\mathbf{12}0280896^2 + 18656000^2 \quad = \mathbf{121}719104^2$

$\mathbf{1232}0280896^2 + 188256000^2 = \mathbf{12321}719104^2$

$\mathbf{123432}0280896^2 + 1884256000^2 = \mathbf{1234321}719104^2 \quad (5.848)$

$0279199^2 + 1698000^2 \quad = \mathbf{1}720801^2$

$\mathbf{12}0279199^2 + 18678000^2 \quad = \mathbf{121}720801^2$

$\mathbf{1232}0279199^2 + 188478000^2 = \mathbf{12321}720801^2$

$\mathbf{123432}0279199^2 + 1886478000^2 = \mathbf{1234321}720801^2 \quad (5.849)$

$0277500^2 + 1700000^2 \quad = \mathbf{1}722500^2$

$\mathbf{12}0277500^2 + 18700000^2 \quad = \mathbf{121}722500^2$

$\mathbf{1232}0277500^2 + 188700000^2 = \mathbf{12321}722500^2$

$\mathbf{123432}0277500^2 + 1888700000^2 = \mathbf{1234321}722500^2 \quad (5.850)$

$0275799^2 + 1702000^2 \quad = \mathbf{1}724201^2$

$\mathbf{12}0275799^2 + 18722000^2 \quad = \mathbf{121}724201^2$

$\mathbf{1232}0275799^2 + 188922000^2 = \mathbf{12321}724201^2$

$\mathbf{123432}0275799^2 + 1890922000^2 = \mathbf{1234321}724201^2 \quad (5.851)$

$0274096^2 + 1704000^2 \quad = \mathbf{1}725904^2$

$\mathbf{12}0274096^2 + 18744000^2 \quad = \mathbf{121}725904^2$

$\mathbf{1232}0274096^2 + 189144000^2 = \mathbf{12321}725904^2$

$\mathbf{123432}0274096^2 + 1893144000^2 = \mathbf{1234321}725904^2 \quad (5.852)$

$0272391^2 + 1706000^2 \quad = \mathbf{1}727609^2$

$\mathbf{12}0272391^2 + 18766000^2 \quad = \mathbf{121}727609^2$

$\mathbf{1232}0272391^2 + 189366000^2 = \mathbf{12321}727609^2$

$\mathbf{123432}0272391^2 + 1895366000^2 = \mathbf{1234321}727609^2 \quad (5.853)$

$0270684^2 + 1708000^2 \quad = \mathbf{1}729316^2$

$\mathbf{12}0270684^2 + 18788000^2 \quad = \mathbf{121}729316^2$

$\mathbf{1232}0270684^2 + 189588000^2 = \mathbf{12321}729316^2$

$\mathbf{123432}0270684^2 + 1897588000^2 = \mathbf{1234321}729316^2 \quad (5.854)$

$0268975^2 + 1710000^2 \quad = \mathbf{1}731025^2$

$\mathbf{12}0268975^2 + 18810000^2 \quad = \mathbf{121}731025^2$

$\mathbf{1232}0268975^2 + 189810000^2 = \mathbf{12321}731025^2$

$\mathbf{123432}0268975^2 + 1899810000^2 = \mathbf{1234321}731025^2 \quad (5.855)$

$0267264^2 + 1712000^2 \quad = \mathbf{1}732736^2$

$\mathbf{12}0267264^2 + 18832000^2 \quad = \mathbf{121}732736^2$

$\mathbf{1232}0267264^2 + 190032000^2 = \mathbf{12321}732736^2$

$\mathbf{123432}0267264^2 + 1902032000^2 = \mathbf{1234321}732736^2 \quad (5.856)$

$0265551^2 + 1714000^2 \quad = \mathbf{1}734449^2$

$\mathbf{12}0265551^2 + 18854000^2 \quad = \mathbf{121}734449^2$

$\mathbf{1232}0265551^2 + 190254000^2 = \mathbf{12321}734449^2$

$\mathbf{123432}0265551^2 + 1904254000^2 = \mathbf{1234321}734449^2 \quad (5.857)$

$0263836^2 + 1716000^2 \quad = \mathbf{1}736164^2$

$\mathbf{12}0263836^2 + 18876000^2 \quad = \mathbf{121}736164^2$

$\mathbf{1232}0263836^2 + 190476000^2 = \mathbf{12321}736164^2$

$\mathbf{123432}0263836^2 + 1906476000^2 = \mathbf{1234321}736164^2 \quad (5.858)$

$0262119^2 + 1718000^2 \quad = \mathbf{1}737881^2$

$\mathbf{12}0262119^2 + 18898000^2 \quad = \mathbf{121}737881^2$

$\mathbf{1232}0262119^2 + 190698000^2 = \mathbf{12321}737881^2$

$\mathbf{123432}0262119^2 + 1908698000^2 = \mathbf{1234321}737881^2 \quad (5.859)$

$0260400^2 + 1720000^2 \quad = \mathbf{1}739600^2$

$\mathbf{12}0260400^2 + 18920000^2 \quad = \mathbf{121}739600^2$

$\mathbf{1232}0260400^2 + 190920000^2 = \mathbf{12321}739600^2$

$\mathbf{123432}0260400^2 + 1910920000^2 = \mathbf{1234321}739600^2 \quad (5.860)$

$0258679^2 + 1722000^2 \quad = \mathbf{1}741321^2$

$\mathbf{12}0258679^2 + 18942000^2 \quad = \mathbf{121}741321^2$

$\mathbf{1232}0258679^2 + 191142000^2 = \mathbf{12321}741321^2$

$\mathbf{123432}0258679^2 + 1913142000^2 = \mathbf{1234321}741321^2 \quad (5.861)$

$0256956^2 + 1724000^2 \quad = \mathbf{1}743044^2$

$\mathbf{12}0256956^2 + 18964000^2 \quad = \mathbf{121}743044^2$

$\mathbf{1232}0256956^2 + 191364000^2 = \mathbf{12321}743044^2$

$\mathbf{123432}0256956^2 + 1915364000^2 = \mathbf{1234321}743044^2 \quad (5.862)$

$0255231^2 + 1726000^2 \quad = \mathbf{1}744769^2$

$\mathbf{12}0255231^2 + 18986000^2 \quad = \mathbf{121}744769^2$

$\mathbf{1232}0255231^2 + 191586000^2 = \mathbf{12321}744769^2$

$\mathbf{123432}0255231^2 + 1917586000^2 = \mathbf{1234321}744769^2 \quad (5.863)$

$0253504^2 + 1728000^2 \quad = \mathbf{1}746496^2$

$\mathbf{12}0253504^2 + 19008000^2 \quad = \mathbf{121}746496^2$

$\mathbf{1232}0253504^2 + 191808000^2 = \mathbf{12321}746496^2$

$\mathbf{123432}0253504^2 + 1919808000^2 = \mathbf{1234321}746496^2 \quad (5.864)$

$0251775^2 + 1730000^2 \quad = \mathbf{1}\,748225^2$

$\mathbf{12}\,0251775^2 + 19030000^2 \quad = \mathbf{121}\,748225^2$

$\mathbf{1232}\,0251775^2 + 192030000^2 \quad = \mathbf{12321}\,748225^2$

$\mathbf{123432}\,0251775^2 + 1922030000^2 = \mathbf{1234321}\,748225^2 \quad (5.865)$

$0250044^2 + 1732000^2 \quad = \mathbf{1}\,749956^2$

$\mathbf{12}\,0250044^2 + 19052000^2 \quad = \mathbf{121}\,749956^2$

$\mathbf{1232}\,0250044^2 + 192252000^2 \quad = \mathbf{12321}\,749956^2$

$\mathbf{123432}\,0250044^2 + 1924252000^2 = \mathbf{1234321}\,749956^2 \quad (5.866)$

$0248311^2 + 1734000^2 \quad = \mathbf{1}\,751689^2$

$\mathbf{12}\,0248311^2 + 19074000^2 \quad = \mathbf{121}\,751689^2$

$\mathbf{1232}\,0248311^2 + 192474000^2 \quad = \mathbf{12321}\,751689^2$

$\mathbf{123432}\,0248311^2 + 1926474000^2 = \mathbf{1234321}\,751689^2 \quad (5.867)$

$0246576^2 + 1736000^2 \quad = \mathbf{1}\,753424^2$

$\mathbf{12}\,0246576^2 + 19096000^2 \quad = \mathbf{121}\,753424^2$

$\mathbf{1232}\,0246576^2 + 192696000^2 \quad = \mathbf{12321}\,753424^2$

$\mathbf{123432}\,0246576^2 + 1928696000^2 = \mathbf{1234321}\,753424^2 \quad (5.868)$

$0244839^2 + 1738000^2 \quad = \mathbf{1}\,755161^2$

$\mathbf{12}\,0244839^2 + 19118000^2 \quad = \mathbf{121}\,755161^2$

$\mathbf{1232}\,0244839^2 + 192918000^2 \quad = \mathbf{12321}\,755161^2$

$\mathbf{123432}\,0244839^2 + 1930918000^2 = \mathbf{1234321}\,755161^2 \quad (5.869)$

$0243100^2 + 1740000^2 \quad = \mathbf{1}\,756900^2$

$\mathbf{12}\,0243100^2 + 19140000^2 \quad = \mathbf{121}\,756900^2$

$\mathbf{1232}\,0243100^2 + 193140000^2 \quad = \mathbf{12321}\,756900^2$

$\mathbf{123432}\,0243100^2 + 1933140000^2 = \mathbf{1234321}\,756900^2 \quad (5.870)$

$0241359^2 + 1742000^2 \quad = \mathbf{1}\,758641^2$

$\mathbf{12}\,0241359^2 + 19162000^2 \quad = \mathbf{121}\,758641^2$

$\mathbf{1232}\,0241359^2 + 193362000^2 \quad = \mathbf{12321}\,758641^2$

$\mathbf{123432}\,0241359^2 + 1935362000^2 = \mathbf{1234321}\,758641^2 \quad (5.871)$

$0239616^2 + 1744000^2 \quad = \mathbf{1}\,760384^2$

$\mathbf{12}\,0239616^2 + 19184000^2 \quad = \mathbf{121}\,760384^2$

$\mathbf{1232}\,0239616^2 + 193584000^2 \quad = \mathbf{12321}\,760384^2$

$\mathbf{123432}\,0239616^2 + 1937584000^2 = \mathbf{1234321}\,760384^2 \quad (5.872)$

$0237871^2 + 1746000^2 \quad = \mathbf{1}\,762129^2$

$\mathbf{12}\,0237871^2 + 19206000^2 \quad = \mathbf{121}\,762129^2$

$\mathbf{1232}\,0237871^2 + 193806000^2 \quad = \mathbf{12321}\,762129^2$

$\mathbf{123432}\,0237871^2 + 1939806000^2 = \mathbf{1234321}\,762129^2 \quad (5.873)$

$0236124^2 + 1748000^2 \quad = \mathbf{1}\,763876^2$

$\mathbf{12}\,0236124^2 + 19228000^2 \quad = \mathbf{121}\,763876^2$

$\mathbf{1232}\,0236124^2 + 194028000^2 \quad = \mathbf{12321}\,763876^2$

$\mathbf{123432}\,0236124^2 + 1942028000^2 = \mathbf{1234321}\,763876^2 \quad (5.874)$

$0234375^2 + 1750000^2 \quad = \mathbf{1}\,765625^2$

$\mathbf{12}\,0234375^2 + 19250000^2 \quad = \mathbf{121}\,765625^2$

$\mathbf{1232}\,0234375^2 + 194250000^2 \quad = \mathbf{12321}\,765625^2$

$\mathbf{123432}\,0234375^2 + 1944250000^2 = \mathbf{1234321}\,765625^2 \quad (5.875)$

$0232624^2 + 1752000^2 \quad = \mathbf{1}\,767376^2$

$\mathbf{12}\,0232624^2 + 19272000^2 \quad = \mathbf{121}\,767376^2$

$\mathbf{1232}\,0232624^2 + 194472000^2 \quad = \mathbf{12321}\,767376^2$

$\mathbf{123432}\,0232624^2 + 1946472000^2 = \mathbf{1234321}\,767376^2 \quad (5.876)$

$0230871^2 + 1754000^2 \quad = \mathbf{1}\,769129^2$

$\mathbf{12}\,0230871^2 + 19294000^2 \quad = \mathbf{121}\,769129^2$

$\mathbf{1232}\,0230871^2 + 194694000^2 \quad = \mathbf{12321}\,769129^2$

$\mathbf{123432}\,0230871^2 + 1948694000^2 = \mathbf{1234321}\,769129^2 \quad (5.877)$

$0229116^2 + 1756000^2 \quad = \mathbf{1}\,770884^2$

$\mathbf{12}\,0229116^2 + 19316000^2 \quad = \mathbf{121}\,770884^2$

$\mathbf{1232}\,0229116^2 + 194916000^2 \quad = \mathbf{12321}\,770884^2$

$\mathbf{123432}\,0229116^2 + 1950916000^2 = \mathbf{1234321}\,770884^2 \quad (5.878)$

$0227359^2 + 1758000^2 \quad = \mathbf{1}\,772641^2$

$\mathbf{12}\,0227359^2 + 19338000^2 \quad = \mathbf{121}\,772641^2$

$\mathbf{1232}\,0227359^2 + 195138000^2 \quad = \mathbf{12321}\,772641^2$

$\mathbf{123432}\,0227359^2 + 1953138000^2 = \mathbf{1234321}\,772641^2 \quad (5.879)$

$0225600^2 + 1760000^2 \quad = \mathbf{1}\,774400^2$

$\mathbf{12}\,0225600^2 + 19360000^2 \quad = \mathbf{121}\,774400^2$

$\mathbf{1232}\,0225600^2 + 195360000^2 \quad = \mathbf{12321}\,774400^2$

$\mathbf{123432}\,0225600^2 + 1955360000^2 = \mathbf{1234321}\,774400^2 \quad (5.880)$

$0223839^2 + 1762000^2 \quad = \mathbf{1}\,776161^2$

$\mathbf{12}\,0223839^2 + 19382000^2 \quad = \mathbf{121}\,776161^2$

$\mathbf{1232}\,0223839^2 + 195582000^2 \quad = \mathbf{12321}\,776161^2$

$\mathbf{123432}\,0223839^2 + 1957582000^2 = \mathbf{1234321}\,776161^2 \quad (5.881)$

$$0222076^2 + 1764000^2 = 1\,777924^2$$
$$\mathbf{12}\,0222076^2 + 19404000^2 = \mathbf{121}\,777924^2$$
$$\mathbf{1232}\,0222076^2 + 195804000^2 = \mathbf{12321}\,777924^2$$
$$\mathbf{123432}\,0222076^2 + 1959804000^2 = \mathbf{1234321}\,777924^2 \quad (5.882)$$

$$0206119^2 + 1782000^2 = 1\,793881^2$$
$$\mathbf{12}\,0206119^2 + 19602000^2 = \mathbf{121}\,793881^2$$
$$\mathbf{1232}\,0206119^2 + 197802000^2 = \mathbf{12321}\,793881^2$$
$$\mathbf{123432}\,0206119^2 + 1979802000^2 = \mathbf{1234321}\,793881^2 \quad (5.891)$$

$$0220311^2 + 1766000^2 = 1\,779689^2$$
$$\mathbf{12}\,0220311^2 + 19426000^2 = \mathbf{121}\,779689^2$$
$$\mathbf{1232}\,0220311^2 + 196026000^2 = \mathbf{12321}\,779689^2$$
$$\mathbf{123432}\,0220311^2 + 1962026000^2 = \mathbf{1234321}\,779689^2 \quad (5.883)$$

$$0204336^2 + 1784000^2 = 1\,795664^2$$
$$\mathbf{12}\,0204336^2 + 19624000^2 = \mathbf{121}\,795664^2$$
$$\mathbf{1232}\,0204336^2 + 198024000^2 = \mathbf{12321}\,795664^2$$
$$\mathbf{123432}\,0204336^2 + 1982024000^2 = \mathbf{1234321}\,795664^2 \quad (5.892)$$

$$0218544^2 + 1768000^2 = 1\,781456^2$$
$$\mathbf{12}\,0218544^2 + 19448000^2 = \mathbf{121}\,781456^2$$
$$\mathbf{1232}\,0218544^2 + 196248000^2 = \mathbf{12321}\,781456^2$$
$$\mathbf{123432}\,0218544^2 + 1964248000^2 = \mathbf{1234321}\,781456^2 \quad (5.884)$$

$$0202551^2 + 1786000^2 = 1\,797449^2$$
$$\mathbf{12}\,0202551^2 + 19646000^2 = \mathbf{121}\,797449^2$$
$$\mathbf{1232}\,0202551^2 + 198246000^2 = \mathbf{12321}\,797449^2$$
$$\mathbf{123432}\,0202551^2 + 1984246000^2 = \mathbf{1234321}\,797449^2 \quad (5.893)$$

$$0216775^2 + 1770000^2 = 1\,783225^2$$
$$\mathbf{12}\,0216775^2 + 19470000^2 = \mathbf{121}\,783225^2$$
$$\mathbf{1232}\,0216775^2 + 196470000^2 = \mathbf{12321}\,783225^2$$
$$\mathbf{123432}\,0216775^2 + 1966470000^2 = \mathbf{1234321}\,783225^2 \quad (5.885)$$

$$0200764^2 + 1788000^2 = 1\,799236^2$$
$$\mathbf{12}\,0200764^2 + 19668000^2 = \mathbf{121}\,799236^2$$
$$\mathbf{1232}\,0200764^2 + 198468000^2 = \mathbf{12321}\,799236^2$$
$$\mathbf{123432}\,0200764^2 + 1986468000^2 = \mathbf{1234321}\,799236^2 \quad (5.894)$$

$$0215004^2 + 1772000^2 = 1\,784996^2$$
$$\mathbf{12}\,0215004^2 + 19492000^2 = \mathbf{121}\,784996^2$$
$$\mathbf{1232}\,0215004^2 + 196692000^2 = \mathbf{12321}\,784996^2$$
$$\mathbf{123432}\,0215004^2 + 1968692000^2 = \mathbf{1234321}\,784996^2 \quad (5.886)$$

$$0198975^2 + 1790000^2 = 1\,801025^2$$
$$\mathbf{12}\,0198975^2 + 19690000^2 = \mathbf{121}\,801025^2$$
$$\mathbf{1232}\,0198975^2 + 198690000^2 = \mathbf{12321}\,801025^2$$
$$\mathbf{123432}\,0198975^2 + 1988690000^2 = \mathbf{1234321}\,801025^2 \quad (5.895)$$

$$0213231^2 + 1774000^2 = 1\,786769^2$$
$$\mathbf{12}\,0213231^2 + 19514000^2 = \mathbf{121}\,786769^2$$
$$\mathbf{1232}\,0213231^2 + 196914000^2 = \mathbf{12321}\,786769^2$$
$$\mathbf{123432}\,0213231^2 + 1970914000^2 = \mathbf{1234321}\,786769^2 \quad (5.887)$$

$$0197184^2 + 1792000^2 = 1\,802816^2$$
$$\mathbf{12}\,0197184^2 + 19712000^2 = \mathbf{121}\,802816^2$$
$$\mathbf{1232}\,0197184^2 + 198912000^2 = \mathbf{12321}\,802816^2$$
$$\mathbf{123432}\,0197184^2 + 1990912000^2 = \mathbf{1234321}\,802816^2 \quad (5.896)$$

$$0211456^2 + 1776000^2 = 1\,788544^2$$
$$\mathbf{12}\,0211456^2 + 19536000^2 = \mathbf{121}\,788544^2$$
$$\mathbf{1232}\,0211456^2 + 197136000^2 = \mathbf{12321}\,788544^2$$
$$\mathbf{123432}\,0211456^2 + 1973136000^2 = \mathbf{1234321}\,788544^2 \quad (5.888)$$

$$0195391^2 + 1794000^2 = 1\,804609^2$$
$$\mathbf{12}\,0195391^2 + 19734000^2 = \mathbf{121}\,804609^2$$
$$\mathbf{1232}\,0195391^2 + 199134000^2 = \mathbf{12321}\,804609^2$$
$$\mathbf{123432}\,0195391^2 + 1993134000^2 = \mathbf{1234321}\,804609^2 \quad (5.897)$$

$$0209679^2 + 1778000^2 = 1\,790321^2$$
$$\mathbf{12}\,0209679^2 + 19558000^2 = \mathbf{121}\,790321^2$$
$$\mathbf{1232}\,0209679^2 + 197358000^2 = \mathbf{12321}\,790321^2$$
$$\mathbf{123432}\,0209679^2 + 1975358000^2 = \mathbf{1234321}\,790321^2 \quad (5.889)$$

$$0193596^2 + 1796000^2 = 1\,806404^2$$
$$\mathbf{12}\,0193596^2 + 19756000^2 = \mathbf{121}\,806404^2$$
$$\mathbf{1232}\,0193596^2 + 199356000^2 = \mathbf{12321}\,806404^2$$
$$\mathbf{123432}\,0193596^2 + 1995356000^2 = \mathbf{1234321}\,806404^2 \quad (5.898)$$

$$0207900^2 + 1780000^2 = 1\,792100^2$$
$$\mathbf{12}\,0207900^2 + 19580000^2 = \mathbf{121}\,792100^2$$
$$\mathbf{1232}\,0207900^2 + 197580000^2 = \mathbf{12321}\,792100^2$$
$$\mathbf{123432}\,0207900^2 + 1977580000^2 = \mathbf{1234321}\,792100^2 \quad (5.890)$$

$$0191799^2 + 1798000^2 = 1\,808201^2$$
$$\mathbf{12}\,0191799^2 + 19778000^2 = \mathbf{121}\,808201^2$$
$$\mathbf{1232}\,0191799^2 + 199578000^2 = \mathbf{12321}\,808201^2$$
$$\mathbf{123432}\,0191799^2 + 1997578000^2 = \mathbf{1234321}\,808201^2 \quad (5.899)$$

5.10   For $n = 900, 901, 901, ..., 997, 998, 999$:

Let's consider

$m = 1000, 11000, 111000, 1111000, 11111000, 111111000, 1111111000, 11111111000, 111111111000$

in (1.1), then for each value of $n = 900, 901, 901, ..., 997, 998, 999$; there are 100 *palindromic-type pandigital Pythagorean patterns* given below. In each case, only first four values are written. The other 5 values can be written on similar lines as done in subsection 5.1.1.

$$0190000^2 + 1800000^2 = \mathbf{1}810000^2$$
$$\mathbf{12}0190000^2 + 19800000^2 = \mathbf{121}810000^2$$
$$\mathbf{1232}0190000^2 + 199800000^2 = \mathbf{12321}810000^2$$
$$\mathbf{123432}0190000^2 + 1999800000^2 = \mathbf{1234321}810000^2 \quad (5.900)$$

$$0177351^2 + 1814000^2 = \mathbf{1}822649^2$$
$$\mathbf{12}0177351^2 + 19954000^2 = \mathbf{121}822649^2$$
$$\mathbf{1232}0177351^2 + 201354000^2 = \mathbf{12321}822649^2$$
$$\mathbf{123432}0177351^2 + 2015354000^2 = \mathbf{1234321}822649^2 \quad (5.907)$$

$$0188199^2 + 1802000^2 = \mathbf{1}811801^2$$
$$\mathbf{12}0188199^2 + 19822000^2 = \mathbf{121}811801^2$$
$$\mathbf{1232}0188199^2 + 200022000^2 = \mathbf{12321}811801^2$$
$$\mathbf{123432}0188199^2 + 2002022000^2 = \mathbf{1234321}811801^2 \quad (5.901)$$

$$0175536^2 + 1816000^2 = \mathbf{1}824464^2$$
$$\mathbf{12}0175536^2 + 19976000^2 = \mathbf{121}824464^2$$
$$\mathbf{1232}0175536^2 + 201576000^2 = \mathbf{12321}824464^2$$
$$\mathbf{123432}0175536^2 + 2017576000^2 = \mathbf{1234321}824464^2 \quad (5.908)$$

$$0186396^2 + 1804000^2 = \mathbf{1}813604^2$$
$$\mathbf{12}0186396^2 + 19844000^2 = \mathbf{121}813604^2$$
$$\mathbf{1232}0186396^2 + 200244000^2 = \mathbf{12321}813604^2$$
$$\mathbf{123432}0186396^2 + 2004244000^2 = \mathbf{1234321}813604^2 \quad (5.902)$$

$$0173719^2 + 1818000^2 = \mathbf{1}826281^2$$
$$\mathbf{12}0173719^2 + 19998000^2 = \mathbf{121}826281^2$$
$$\mathbf{1232}0173719^2 + 201798000^2 = \mathbf{12321}826281^2$$
$$\mathbf{123432}0173719^2 + 2019798000^2 = \mathbf{1234321}826281^2 \quad (5.909)$$

$$0184591^2 + 1806000^2 = \mathbf{1}815409^2$$
$$\mathbf{12}0184591^2 + 19866000^2 = \mathbf{121}815409^2$$
$$\mathbf{1232}0184591^2 + 200466000^2 = \mathbf{12321}815409^2$$
$$\mathbf{123432}0184591^2 + 2006466000^2 = \mathbf{1234321}815409^2 \quad (5.903)$$

$$0171900^2 + 1820000^2 = \mathbf{1}828100^2$$
$$\mathbf{12}0171900^2 + 20020000^2 = \mathbf{121}828100^2$$
$$\mathbf{1232}0171900^2 + 202020000^2 = \mathbf{12321}828100^2$$
$$\mathbf{123432}0171900^2 + 2022020000^2 = \mathbf{1234321}828100^2 \quad (5.910)$$

$$0182784^2 + 1808000^2 = \mathbf{1}817216^2$$
$$\mathbf{12}0182784^2 + 19888000^2 = \mathbf{121}817216^2$$
$$\mathbf{1232}0182784^2 + 200688000^2 = \mathbf{12321}817216^2$$
$$\mathbf{123432}0182784^2 + 2008688000^2 = \mathbf{1234321}817216^2 \quad (5.904)$$

$$0170079^2 + 1822000^2 = \mathbf{1}829921^2$$
$$\mathbf{12}0170079^2 + 20042000^2 = \mathbf{121}829921^2$$
$$\mathbf{1232}0170079^2 + 202242000^2 = \mathbf{12321}829921^2$$
$$\mathbf{123432}0170079^2 + 2024242000^2 = \mathbf{1234321}829921^2 \quad (5.911)$$

$$0180975^2 + 1810000^2 = \mathbf{1}819025^2$$
$$\mathbf{12}0180975^2 + 19910000^2 = \mathbf{121}819025^2$$
$$\mathbf{1232}0180975^2 + 200910000^2 = \mathbf{12321}819025^2$$
$$\mathbf{123432}0180975^2 + 2010910000^2 = \mathbf{1234321}819025^2 \quad (5.905)$$

$$0168256^2 + 1824000^2 = \mathbf{1}831744^2$$
$$\mathbf{12}0168256^2 + 20064000^2 = \mathbf{121}831744^2$$
$$\mathbf{1232}0168256^2 + 202464000^2 = \mathbf{12321}831744^2$$
$$\mathbf{123432}0168256^2 + 2026464000^2 = \mathbf{1234321}831744^2 \quad (5.912)$$

$$0179164^2 + 1812000^2 = \mathbf{1}820836^2$$
$$\mathbf{12}0179164^2 + 19932000^2 = \mathbf{121}820836^2$$
$$\mathbf{1232}0179164^2 + 201132000^2 = \mathbf{12321}820836^2$$
$$\mathbf{123432}0179164^2 + 2013132000^2 = \mathbf{1234321}820836^2 \quad (5.906)$$

$$0166431^2 + 1826000^2 = \mathbf{1}833569^2$$
$$\mathbf{12}0166431^2 + 20086000^2 = \mathbf{121}833569^2$$
$$\mathbf{1232}0166431^2 + 202686000^2 = \mathbf{12321}833569^2$$
$$\mathbf{123432}0166431^2 + 2028686000^2 = \mathbf{1234321}833569^2 \quad (5.913)$$

$$0164604^2 + 1828000^2 = \mathbf{1}\,835396^2$$
$$\mathbf{12}\,0164604^2 + 20108000^2 = \mathbf{121}\,835396^2$$
$$\mathbf{1232}\,0164604^2 + 202908000^2 = \mathbf{12321}\,835396^2$$
$$\mathbf{123432}\,0164604^2 + 2030908000^2 = \mathbf{1234321}\,835396^2 \quad (5.914)$$

$$0162775^2 + 1830000^2 = \mathbf{1}\,837225^2$$
$$\mathbf{12}\,0162775^2 + 20130000^2 = \mathbf{121}\,837225^2$$
$$\mathbf{1232}\,0162775^2 + 203130000^2 = \mathbf{12321}\,837225^2$$
$$\mathbf{123432}\,0162775^2 + 2033130000^2 = \mathbf{1234321}\,837225^2 \quad (5.915)$$

$$0160944^2 + 1832000^2 = \mathbf{1}\,839056^2$$
$$\mathbf{12}\,0160944^2 + 20152000^2 = \mathbf{121}\,839056^2$$
$$\mathbf{1232}\,0160944^2 + 203352000^2 = \mathbf{12321}\,839056^2$$
$$\mathbf{123432}\,0160944^2 + 2035352000^2 = \mathbf{1234321}\,839056^2 \quad (5.916)$$

$$0159111^2 + 1834000^2 = \mathbf{1}\,840889^2$$
$$\mathbf{12}\,0159111^2 + 20174000^2 = \mathbf{121}\,840889^2$$
$$\mathbf{1232}\,0159111^2 + 203574000^2 = \mathbf{12321}\,840889^2$$
$$\mathbf{123432}\,0159111^2 + 2037574000^2 = \mathbf{1234321}\,840889^2 \quad (5.917)$$

$$0157276^2 + 1836000^2 = \mathbf{1}\,842724^2$$
$$\mathbf{12}\,0157276^2 + 20196000^2 = \mathbf{121}\,842724^2$$
$$\mathbf{1232}\,0157276^2 + 203796000^2 = \mathbf{12321}\,842724^2$$
$$\mathbf{123432}\,0157276^2 + 2039796000^2 = \mathbf{1234321}\,842724^2 \quad (5.918)$$

$$0155439^2 + 1838000^2 = \mathbf{1}\,844561^2$$
$$\mathbf{12}\,0155439^2 + 20218000^2 = \mathbf{121}\,844561^2$$
$$\mathbf{1232}\,0155439^2 + 204018000^2 = \mathbf{12321}\,844561^2$$
$$\mathbf{123432}\,0155439^2 + 2042018000^2 = \mathbf{1234321}\,844561^2 \quad (5.919)$$

$$0153600^2 + 1840000^2 = \mathbf{1}\,846400^2$$
$$\mathbf{12}\,0153600^2 + 20240000^2 = \mathbf{121}\,846400^2$$
$$\mathbf{1232}\,0153600^2 + 204240000^2 = \mathbf{12321}\,846400^2$$
$$\mathbf{123432}\,0153600^2 + 2044240000^2 = \mathbf{1234321}\,846400^2 \quad (5.920)$$

$$0151759^2 + 1842000^2 = \mathbf{1}\,848241^2$$
$$\mathbf{12}\,0151759^2 + 20262000^2 = \mathbf{121}\,848241^2$$
$$\mathbf{1232}\,0151759^2 + 204462000^2 = \mathbf{12321}\,848241^2$$
$$\mathbf{123432}\,0151759^2 + 2046462000^2 = \mathbf{1234321}\,848241^2 \quad (5.921)$$

$$0149916^2 + 1844000^2 = \mathbf{1}\,850084^2$$
$$\mathbf{12}\,0149916^2 + 20284000^2 = \mathbf{121}\,850084^2$$
$$\mathbf{1232}\,0149916^2 + 204684000^2 = \mathbf{12321}\,850084^2$$
$$\mathbf{123432}\,0149916^2 + 2048684000^2 = \mathbf{1234321}\,850084^2 \quad (5.922)$$

$$0148071^2 + 1846000^2 = \mathbf{1}\,851929^2$$
$$\mathbf{12}\,0148071^2 + 20306000^2 = \mathbf{121}\,851929^2$$
$$\mathbf{1232}\,0148071^2 + 204906000^2 = \mathbf{12321}\,851929^2$$
$$\mathbf{123432}\,0148071^2 + 2050906000^2 = \mathbf{1234321}\,851929^2 \quad (5.923)$$

$$0146224^2 + 1848000^2 = \mathbf{1}\,853776^2$$
$$\mathbf{12}\,0146224^2 + 20328000^2 = \mathbf{121}\,853776^2$$
$$\mathbf{1232}\,0146224^2 + 205128000^2 = \mathbf{12321}\,853776^2$$
$$\mathbf{123432}\,0146224^2 + 2053128000^2 = \mathbf{1234321}\,853776^2 \quad (5.924)$$

$$0144375^2 + 1850000^2 = \mathbf{1}\,855625^2$$
$$\mathbf{12}\,0144375^2 + 20350000^2 = \mathbf{121}\,855625^2$$
$$\mathbf{1232}\,0144375^2 + 205350000^2 = \mathbf{12321}\,855625^2$$
$$\mathbf{123432}\,0144375^2 + 2055350000^2 = \mathbf{1234321}\,855625^2 \quad (5.925)$$

$$0142524^2 + 1852000^2 = \mathbf{1}\,857476^2$$
$$\mathbf{12}\,0142524^2 + 20372000^2 = \mathbf{121}\,857476^2$$
$$\mathbf{1232}\,0142524^2 + 205572000^2 = \mathbf{12321}\,857476^2$$
$$\mathbf{123432}\,0142524^2 + 2057572000^2 = \mathbf{1234321}\,857476^2 \quad (5.926)$$

$$0140671^2 + 1854000^2 = \mathbf{1}\,859329^2$$
$$\mathbf{12}\,0140671^2 + 20394000^2 = \mathbf{121}\,859329^2$$
$$\mathbf{1232}\,0140671^2 + 205794000^2 = \mathbf{12321}\,859329^2$$
$$\mathbf{123432}\,0140671^2 + 2059794000^2 = \mathbf{1234321}\,859329^2 \quad (5.927)$$

$$0138816^2 + 1856000^2 = \mathbf{1}\,861184^2$$
$$\mathbf{12}\,0138816^2 + 20416000^2 = \mathbf{121}\,861184^2$$
$$\mathbf{1232}\,0138816^2 + 206016000^2 = \mathbf{12321}\,861184^2$$
$$\mathbf{123432}\,0138816^2 + 2062016000^2 = \mathbf{1234321}\,861184^2 \quad (5.928)$$

$$0136959^2 + 1858000^2 = \mathbf{1}\,863041^2$$
$$\mathbf{12}\,0136959^2 + 20438000^2 = \mathbf{121}\,863041^2$$
$$\mathbf{1232}\,0136959^2 + 206238000^2 = \mathbf{12321}\,863041^2$$
$$\mathbf{123432}\,0136959^2 + 2064238000^2 = \mathbf{1234321}\,863041^2 \quad (5.929)$$

$$0135100^2 + 1860000^2 = \mathbf{1}\,864900^2$$
$$\mathbf{12}\,0135100^2 + 20460000^2 = \mathbf{121}\,864900^2$$
$$\mathbf{1232}\,0135100^2 + 206460000^2 = \mathbf{12321}\,864900^2$$
$$\mathbf{123432}\,0135100^2 + 2066460000^2 = \mathbf{1234321}\,864900^2 \quad (5.930)$$

$$0133239^2 + 1862000^2 = \mathbf{1}\,866761^2$$
$$\mathbf{12}\,0133239^2 + 20482000^2 = \mathbf{121}\,866761^2$$
$$\mathbf{1232}\,0133239^2 + 206682000^2 = \mathbf{12321}\,866761^2$$
$$\mathbf{123432}\,0133239^2 + 2068682000^2 = \mathbf{1234321}\,866761^2 \quad (5.931)$$

$$0131376^2 + 1864000^2 = \mathbf{1}\,868624^2$$
$$\mathbf{12}\,0131376^2 + 20504000^2 = \mathbf{121}\,868624^2$$
$$\mathbf{1232}\,0131376^2 + 206904000^2 = \mathbf{12321}\,868624^2$$
$$\mathbf{123432}\,0131376^2 + 2070904000^2 = \mathbf{1234321}\,868624^2 \quad (5.932)$$

$$00129511^2 + 1866000^2 = \mathbf{1}\,870489^2$$
$$\mathbf{12}\,0129511^2 + 20526000^2 = \mathbf{121}\,870489^2$$
$$\mathbf{1232}\,0129511^2 + 207126000^2 = \mathbf{12321}\,870489^2$$
$$\mathbf{123432}\,0129511^2 + 2073126000^2 = \mathbf{1234321}\,870489^2 \quad (5.933)$$

$$00127644^2 + 1868000^2 = \mathbf{1}\,872356^2$$
$$\mathbf{12}\,0127644^2 + 20548000^2 = \mathbf{121}\,872356^2$$
$$\mathbf{1232}\,0127644^2 + 207348000^2 = \mathbf{12321}\,872356^2$$
$$\mathbf{123432}\,0127644^2 + 2075348000^2 = \mathbf{1234321}\,872356^2 \quad (5.934)$$

$$00125775^2 + 1870000^2 = \mathbf{1}\,874225^2$$
$$\mathbf{12}\,0125775^2 + 20570000^2 = \mathbf{121}\,874225^2$$
$$\mathbf{1232}\,0125775^2 + 207570000^2 = \mathbf{12321}\,874225^2$$
$$\mathbf{123432}\,0125775^2 + 2077570000^2 = \mathbf{1234321}\,874225^2 \quad (5.935)$$

$$00123904^2 + 1872000^2 = \mathbf{1}\,876096^2$$
$$\mathbf{12}\,0123904^2 + 20592000^2 = \mathbf{121}\,876096^2$$
$$\mathbf{1232}\,0123904^2 + 207792000^2 = \mathbf{12321}\,876096^2$$
$$\mathbf{123432}\,0123904^2 + 2079792000^2 = \mathbf{1234321}\,876096^2 \quad (5.936)$$

$$00122031^2 + 1874000^2 = \mathbf{1}\,877969^2$$
$$\mathbf{12}\,0122031^2 + 20614000^2 = \mathbf{121}\,877969^2$$
$$\mathbf{1232}\,0122031^2 + 208014000^2 = \mathbf{12321}\,877969^2$$
$$\mathbf{123432}\,0122031^2 + 2082014000^2 = \mathbf{1234321}\,877969^2 \quad (5.937)$$

$$00120156^2 + 1876000^2 = \mathbf{1}\,879844^2$$
$$\mathbf{12}\,0120156^2 + 20636000^2 = \mathbf{121}\,879844^2$$
$$\mathbf{1232}\,0120156^2 + 208236000^2 = \mathbf{12321}\,879844^2$$
$$\mathbf{123432}\,0120156^2 + 2084236000^2 = \mathbf{1234321}\,879844^2 \quad (5.938)$$

$$00118279^2 + 1878000^2 = \mathbf{1}\,881721^2$$
$$\mathbf{12}\,0118279^2 + 20658000^2 = \mathbf{121}\,881721^2$$
$$\mathbf{1232}\,0118279^2 + 208458000^2 = \mathbf{12321}\,881721^2$$
$$\mathbf{123432}\,0118279^2 + 2086458000^2 = \mathbf{1234321}\,881721^2 \quad (5.939)$$

$$00116400^2 + 1880000^2 = \mathbf{1}\,883600^2$$
$$\mathbf{12}\,0116400^2 + 20680000^2 = \mathbf{121}\,883600^2$$
$$\mathbf{1232}\,0116400^2 + 208680000^2 = \mathbf{12321}\,883600^2$$
$$\mathbf{123432}\,0116400^2 + 2088680000^2 = \mathbf{1234321}\,883600^2 \quad (5.940)$$

$$00114519^2 + 1882000^2 = \mathbf{1}\,885481^2$$
$$\mathbf{12}\,0114519^2 + 20702000^2 = \mathbf{121}\,885481^2$$
$$\mathbf{1232}\,0114519^2 + 208902000^2 = \mathbf{12321}\,885481^2$$
$$\mathbf{123432}\,0114519^2 + 2090902000^2 = \mathbf{1234321}\,885481^2 \quad (5.941)$$

$$00112636^2 + 1884000^2 = \mathbf{1}\,887364^2$$
$$\mathbf{12}\,0112636^2 + 20724000^2 = \mathbf{121}\,887364^2$$
$$\mathbf{1232}\,0112636^2 + 209124000^2 = \mathbf{12321}\,887364^2$$
$$\mathbf{123432}\,0112636^2 + 2093124000^2 = \mathbf{1234321}\,887364^2 \quad (5.942)$$

$$00110751^2 + 1886000^2 = \mathbf{1}\,889249^2$$
$$\mathbf{12}\,0110751^2 + 20746000^2 = \mathbf{121}\,889249^2$$
$$\mathbf{1232}\,0110751^2 + 209346000^2 = \mathbf{12321}\,889249^2$$
$$\mathbf{123432}\,0110751^2 + 2095346000^2 = \mathbf{1234321}\,889249^2 \quad (5.943)$$

$$00108864^2 + 1888000^2 = \mathbf{1}\,891136^2$$
$$\mathbf{12}\,0108864^2 + 20768000^2 = \mathbf{121}\,891136^2$$
$$\mathbf{1232}\,0108864^2 + 209568000^2 = \mathbf{12321}\,891136^2$$
$$\mathbf{123432}\,0108864^2 + 2097568000^2 = \mathbf{1234321}\,891136^2 \quad (5.944)$$

$$00106975^2 + 1890000^2 = \mathbf{1}\,893025^2$$
$$\mathbf{12}\,0106975^2 + 20790000^2 = \mathbf{121}\,893025^2$$
$$\mathbf{1232}\,0106975^2 + 209790000^2 = \mathbf{12321}\,893025^2$$
$$\mathbf{123432}\,0106975^2 + 2099790000^2 = \mathbf{1234321}\,893025^2 \quad (5.945)$$

$$00105084^2 + 1892000^2 = \mathbf{1}\,894916^2$$
$$\mathbf{12}\,0105084^2 + 20812000^2 = \mathbf{121}\,894916^2$$
$$\mathbf{1232}\,0105084^2 + 210012000^2 = \mathbf{12321}\,894916^2$$
$$\mathbf{123432}\,0105084^2 + 2102012000^2 = \mathbf{1234321}\,894916^2 \quad (5.946)$$

$$00103191^2 + 1894000^2 = \mathbf{1}\,896809^2$$
$$\mathbf{12}\,0103191^2 + 20834000^2 = \mathbf{121}\,896809^2$$
$$\mathbf{1232}\,0103191^2 + 210234000^2 = \mathbf{12321}\,896809^2$$
$$\mathbf{123432}\,0103191^2 + 2104234000^2 = \mathbf{1234321}\,896809^2 \quad (5.947)$$

$00101296^2 + 1896000^2 = \mathbf{1}\,898704^2$

$\mathbf{12}\,0101296^2 + 20856000^2 = \mathbf{121}\,898704^2$

$\mathbf{1232}\,0101296^2 + 210456000^2 = \mathbf{12321}\,898704^2$

$\mathbf{123432}\,0101296^2 + 2106456000^2 = \mathbf{1234321}\,898704^2 \quad (5.948)$

$0099399^2 + 1898000^2 = \mathbf{1}\,900601^2$

$\mathbf{12}\,0099399^2 + 20878000^2 = \mathbf{121}\,900601^2$

$\mathbf{1232}\,0099399^2 + 210678000^2 = \mathbf{12321}\,900601^2$

$\mathbf{123432}\,0099399^2 + 2108678000^2 = \mathbf{1234321}\,900601^2 \quad (5.949)$

$0097500^2 + 1900000^2 = \mathbf{1}\,902500^2$

$\mathbf{12}\,0097500^2 + 20900000^2 = \mathbf{121}\,902500^2$

$\mathbf{1232}\,0097500^2 + 210900000^2 = \mathbf{12321}\,902500^2$

$\mathbf{123432}\,0097500^2 + 2110900000^2 = \mathbf{1234321}\,902500^2 \quad (5.950)$

$0095599^2 + 1902000^2 = \mathbf{1}\,904401^2$

$\mathbf{12}\,0095599^2 + 20922000^2 = \mathbf{121}\,904401^2$

$\mathbf{1232}\,0095599^2 + 211122000^2 = \mathbf{12321}\,904401^2$

$\mathbf{123432}\,0095599^2 + 2113122000^2 = \mathbf{1234321}\,904401^2 \quad (5.951)$

$0093696^2 + 1904000^2 = \mathbf{1}\,906304^2$

$\mathbf{12}\,0093696^2 + 20944000^2 = \mathbf{121}\,906304^2$

$\mathbf{1232}\,0093696^2 + 211344000^2 = \mathbf{12321}\,906304^2$

$\mathbf{123432}\,0093696^2 + 2115344000^2 = \mathbf{1234321}\,906304^2 \quad (5.952)$

$0091791^2 + 1906000^2 = \mathbf{1}\,908209^2$

$\mathbf{12}\,0091791^2 + 20966000^2 = \mathbf{121}\,908209^2$

$\mathbf{1232}\,0091791^2 + 211566000^2 = \mathbf{12321}\,908209^2$

$\mathbf{123432}\,0091791^2 + 2117566000^2 = \mathbf{1234321}\,908209^2 \quad (5.953)$

$0089884^2 + 1908000^2 = \mathbf{1}\,910116^2$

$\mathbf{12}\,0089884^2 + 20988000^2 = \mathbf{121}\,910116^2$

$\mathbf{1232}\,0089884^2 + 211788000^2 = \mathbf{12321}\,910116^2$

$\mathbf{123432}\,0089884^2 + 2119788000^2 = \mathbf{1234321}\,910116^2 \quad (5.954)$

$0087975^2 + 1910000^2 = \mathbf{1}\,912025^2$

$\mathbf{12}\,0087975^2 + 21010000^2 = \mathbf{121}\,912025^2$

$\mathbf{1232}\,0087975^2 + 212010000^2 = \mathbf{12321}\,912025^2$

$\mathbf{123432}\,0087975^2 + 2122010000^2 = \mathbf{1234321}\,912025^2 \quad (5.955)$

$0086064^2 + 1912000^2 = \mathbf{1}\,913936^2$

$\mathbf{12}\,0086064^2 + 21032000^2 = \mathbf{121}\,913936^2$

$\mathbf{1232}\,0086064^2 + 212232000^2 = \mathbf{12321}\,913936^2$

$\mathbf{123432}\,0086064^2 + 2124232000^2 = \mathbf{1234321}\,913936^2 \quad (5.956)$

$0084151^2 + 1914000^2 = \mathbf{1}\,915849^2$

$\mathbf{12}\,0084151^2 + 21054000^2 = \mathbf{121}\,915849^2$

$\mathbf{1232}\,0084151^2 + 212454000^2 = \mathbf{12321}\,915849^2$

$\mathbf{123432}\,0084151^2 + 2126454000^2 = \mathbf{1234321}\,915849^2 \quad (5.957)$

$0082236^2 + 1916000^2 = \mathbf{1}\,917764^2$

$\mathbf{12}\,0082236^2 + 21076000^2 = \mathbf{121}\,917764^2$

$\mathbf{1232}\,0082236^2 + 212676000^2 = \mathbf{12321}\,917764^2$

$\mathbf{123432}\,0082236^2 + 2128676000^2 = \mathbf{1234321}\,917764^2 \quad (5.958)$

$0080319^2 + 1918000^2 = \mathbf{1}\,919681^2$

$\mathbf{12}\,0080319^2 + 21098000^2 = \mathbf{121}\,919681^2$

$\mathbf{1232}\,0080319^2 + 212898000^2 = \mathbf{12321}\,919681^2$

$\mathbf{123432}\,0080319^2 + 2130898000^2 = \mathbf{1234321}\,919681^2 \quad (5.959)$

$0078400^2 + 1920000^2 = \mathbf{1}\,921600^2$

$\mathbf{12}\,0078400^2 + 21120000^2 = \mathbf{121}\,921600^2$

$\mathbf{1232}\,0078400^2 + 213120000^2 = \mathbf{12321}\,921600^2$

$\mathbf{123432}\,0078400^2 + 2133120000^2 = \mathbf{1234321}\,921600^2 \quad (5.960)$

$0076479^2 + 1922000^2 = \mathbf{1}\,923521^2$

$\mathbf{12}\,0076479^2 + 21142000^2 = \mathbf{121}\,923521^2$

$\mathbf{1232}\,0076479^2 + 213342000^2 = \mathbf{12321}\,923521^2$

$\mathbf{123432}\,0076479^2 + 2135342000^2 = \mathbf{1234321}\,923521^2 \quad (5.961)$

$0074556^2 + 1924000^2 = \mathbf{1}\,925444^2$

$\mathbf{12}\,0074556^2 + 21164000^2 = \mathbf{121}\,925444^2$

$\mathbf{1232}\,0074556^2 + 213564000^2 = \mathbf{12321}\,925444^2$

$\mathbf{123432}\,0074556^2 + 2137564000^2 = \mathbf{1234321}\,925444^2 \quad (5.962)$

$0072631^2 + 1926000^2 = \mathbf{1}\,927369^2$

$\mathbf{12}\,0072631^2 + 21186000^2 = \mathbf{121}\,927369^2$

$\mathbf{1232}\,0072631^2 + 213786000^2 = \mathbf{12321}\,927369^2$

$\mathbf{123432}\,0072631^2 + 2139786000^2 = \mathbf{1234321}\,927369^2 \quad (5.963)$

$0070704^2 + 1928000^2 = \mathbf{1}\,929296^2$

$\mathbf{12}\,0070704^2 + 21208000^2 = \mathbf{121}\,929296^2$

$\mathbf{1232}\,0070704^2 + 214008000^2 = \mathbf{12321}\,929296^2$

$\mathbf{123432}\,0070704^2 + 2142008000^2 = \mathbf{1234321}\,929296^2 \quad (5.964)$

$0068775^2 + 1930000^2 = \mathbf{1}\,931225^2$

$\mathbf{12}\,0068775^2 + 21230000^2 = \mathbf{121}\,931225^2$

$\mathbf{1232}\,0068775^2 + 214230000^2 = \mathbf{12321}\,931225^2$

$\mathbf{123432}\,0068775^2 + 2144230000^2 = \mathbf{1234321}\,931225^2$ (5.965)

$0066844^2 + 1932000^2 = \mathbf{1}\,933156^2$

$\mathbf{12}\,0066844^2 + 21252000^2 = \mathbf{121}\,933156^2$

$\mathbf{1232}\,0066844^2 + 214452000^2 = \mathbf{12321}\,933156^2$

$\mathbf{123432}\,0066844^2 + 2146452000^2 = \mathbf{1234321}\,933156^2$ (5.966)

$0064911^2 + 1934000^2 = \mathbf{1}\,935089^2$

$\mathbf{12}\,0064911^2 + 21274000^2 = \mathbf{121}\,935089^2$

$\mathbf{1232}\,0064911^2 + 214674000^2 = \mathbf{12321}\,935089^2$

$\mathbf{123432}\,0064911^2 + 2148674000^2 = \mathbf{1234321}\,935089^2$ (5.967)

$0062976^2 + 1936000^2 = \mathbf{1}\,937024^2$

$\mathbf{12}\,0062976^2 + 21296000^2 = \mathbf{121}\,937024^2$

$\mathbf{1232}\,0062976^2 + 214896000^2 = \mathbf{12321}\,937024^2$

$\mathbf{123432}\,0062976^2 + 2150896000^2 = \mathbf{1234321}\,937024^2$ (5.968)

$0061039^2 + 1938000^2 = \mathbf{1}\,938961^2$

$\mathbf{12}\,0061039^2 + 21318000^2 = \mathbf{121}\,938961^2$

$\mathbf{1232}\,0061039^2 + 215118000^2 = \mathbf{12321}\,938961^2$

$\mathbf{123432}\,0061039^2 + 2153118000^2 = \mathbf{1234321}\,938961^2$ (5.969)

$0059100^2 + 1940000^2 = \mathbf{1}\,940900^2$

$\mathbf{12}\,0059100^2 + 21340000^2 = \mathbf{121}\,940900^2$

$\mathbf{1232}\,0059100^2 + 215340000^2 = \mathbf{12321}\,940900^2$

$\mathbf{123432}\,0059100^2 + 2155340000^2 = \mathbf{1234321}\,940900^2$ (5.970)

$0057159^2 + 1942000^2 = \mathbf{1}\,942841^2$

$\mathbf{12}\,0057159^2 + 21362000^2 = \mathbf{121}\,942841^2$

$\mathbf{1232}\,0057159^2 + 215562000^2 = \mathbf{12321}\,942841^2$

$\mathbf{123432}\,0057159^2 + 2157562000^2 = \mathbf{1234321}\,942841^2$ (5.971)

$0055216^2 + 1944000^2 = \mathbf{1}\,944784^2$

$\mathbf{12}\,0055216^2 + 21384000^2 = \mathbf{121}\,944784^2$

$\mathbf{1232}\,0055216^2 + 215784000^2 = \mathbf{12321}\,944784^2$

$\mathbf{123432}\,0055216^2 + 2159784000^2 = \mathbf{1234321}\,944784^2$ (5.972)

$0053271^2 + 1946000^2 = \mathbf{1}\,946729^2$

$\mathbf{12}\,0053271^2 + 21406000^2 = \mathbf{121}\,946729^2$

$\mathbf{1232}\,0053271^2 + 216006000^2 = \mathbf{12321}\,946729^2$

$\mathbf{123432}\,0053271^2 + 2162006000^2 = \mathbf{1234321}\,946729^2$ (5.973)

$0051324^2 + 1948000^2 = \mathbf{1}\,948676^2$

$\mathbf{12}\,0051324^2 + 21428000^2 = \mathbf{121}\,948676^2$

$\mathbf{1232}\,0051324^2 + 216228000^2 = \mathbf{12321}\,948676^2$

$\mathbf{123432}\,0051324^2 + 2164228000^2 = \mathbf{1234321}\,948676^2$ (5.974)

$0049375^2 + 1950000^2 = \mathbf{1}\,950625^2$

$\mathbf{12}\,0049375^2 + 21450000^2 = \mathbf{121}\,950625^2$

$\mathbf{1232}\,0049375^2 + 216450000^2 = \mathbf{12321}\,950625^2$

$\mathbf{123432}\,0049375^2 + 2166450000^2 = \mathbf{1234321}\,950625^2$ (5.975)

$0047424^2 + 1952000^2 = \mathbf{1}\,952576^2$

$\mathbf{12}\,0047424^2 + 21472000^2 = \mathbf{121}\,952576^2$

$\mathbf{1232}\,0047424^2 + 216672000^2 = \mathbf{12321}\,952576^2$

$\mathbf{123432}\,0047424^2 + 2168672000^2 = \mathbf{1234321}\,952576^2$ (5.976)

$0045471^2 + 1954000^2 = \mathbf{1}\,954529^2$

$\mathbf{12}\,0045471^2 + 21494000^2 = \mathbf{121}\,954529^2$

$\mathbf{1232}\,0045471^2 + 216894000^2 = \mathbf{12321}\,954529^2$

$\mathbf{123432}\,0045471^2 + 2170894000^2 = \mathbf{1234321}\,954529^2$ (5.977)

$0043516^2 + 1956000^2 = \mathbf{1}\,956484^2$

$\mathbf{12}\,0043516^2 + 21516000^2 = \mathbf{121}\,956484^2$

$\mathbf{1232}\,0043516^2 + 217116000^2 = \mathbf{12321}\,956484^2$

$\mathbf{123432}\,0043516^2 + 2173116000^2 = \mathbf{1234321}\,956484^2$ (5.978)

$0041559^2 + 1958000^2 = \mathbf{1}\,958441^2$

$\mathbf{12}\,0041559^2 + 21538000^2 = \mathbf{121}\,958441^2$

$\mathbf{1232}\,0041559^2 + 217338000^2 = \mathbf{12321}\,958441^2$

$\mathbf{123432}\,0041559^2 + 2175338000^2 = \mathbf{1234321}\,958441^2$ (5.979)

$0039600^2 + 1960000^2 = \mathbf{1}\,960400^2$

$\mathbf{12}\,0039600^2 + 21560000^2 = \mathbf{121}\,960400^2$

$\mathbf{1232}\,0039600^2 + 217560000^2 = \mathbf{12321}\,960400^2$

$\mathbf{123432}\,0039600^2 + 2177560000^2 = \mathbf{1234321}\,960400^2$ (5.980)

$0037639^2 + 1962000^2 = \mathbf{1}\,962361^2$

$\mathbf{12}\,0037639^2 + 21582000^2 = \mathbf{121}\,962361^2$

$\mathbf{1232}\,0037639^2 + 217782000^2 = \mathbf{12321}\,962361^2$

$\mathbf{123432}\,0037639^2 + 2179782000^2 = \mathbf{1234321}\,962361^2$ (5.981)

$0035676^2 + 1964000^2 = 1\,964324^2$

$12\,0035676^2 + 21604000^2 = 121\,964324^2$

$1232\,0035676^2 + 218004000^2 = 12321\,964324^2$

$123432\,0035676^2 + 2182004000^2 = 1234321\,964324^2$ (5.982)

$0033711^2 + 1966000^2 = 1\,966289^2$

$12\,0033711^2 + 21626000^2 = 121\,966289^2$

$1232\,0033711^2 + 218226000^2 = 12321\,966289^2$

$123432\,0033711^2 + 2184226000^2 = 1234321\,966289^2$ (5.983)

$0031744^2 + 1968000^2 = 1\,968256^2$

$12\,0031744^2 + 21648000^2 = 121\,968256^2$

$1232\,0031744^2 + 218448000^2 = 12321\,968256^2$

$123432\,0031744^2 + 2186448000^2 = 1234321\,968256^2$ (5.984)

$0029775^2 + 1970000^2 = 1\,970225^2$

$12\,0029775^2 + 21670000^2 = 121\,970225^2$

$1232\,0029775^2 + 218670000^2 = 12321\,970225^2$

$123432\,0029775^2 + 2188670000^2 = 1234321\,970225^2$ (5.985)

$0027804^2 + 1972000^2 = 1\,972196^2$

$12\,0027804^2 + 21692000^2 = 121\,972196^2$

$1232\,0027804^2 + 218892000^2 = 12321\,972196^2$

$123432\,0027804^2 + 2190892000^2 = 1234321\,972196^2$ (5.986)

$0025831^2 + 1974000^2 = 1\,974169^2$

$12\,0025831^2 + 21714000^2 = 121\,974169^2$

$1232\,0025831^2 + 219114000^2 = 12321\,974169^2$

$123432\,0025831^2 + 2193114000^2 = 1234321\,974169^2$ (5.987)

$0023856^2 + 1976000^2 = 1\,976144^2$

$12\,0023856^2 + 21736000^2 = 121\,976144^2$

$1232\,0023856^2 + 219336000^2 = 12321\,976144^2$

$123432\,0023856^2 + 2195336000^2 = 1234321\,976144^2$ (5.988)

$0021879^2 + 1978000^2 = 1\,978121^2$

$12\,0021879^2 + 21758000^2 = 121\,978121^2$

$1232\,0021879^2 + 219558000^2 = 12321\,978121^2$

$123432\,0021879^2 + 2197558000^2 = 1234321\,978121^2$ (5.989)

$0019900^2 + 1980000^2 = 1\,980100^2$

$12\,0019900^2 + 21780000^2 = 121\,980100^2$

$1232\,0019900^2 + 219780000^2 = 12321\,980100^2$

$123432\,0019900^2 + 2199780000^2 = 1234321\,980100^2$ (5.990)

$0017919^2 + 1982000^2 = 1\,982081^2$

$12\,0017919^2 + 21802000^2 = 121\,982081^2$

$1232\,0017919^2 + 220002000^2 = 12321\,982081^2$

$123432\,0017919^2 + 2202002000^2 = 1234321\,982081^2$ (5.991)

$0015936^2 + 1984000^2 = 1\,984064^2$

$12\,0015936^2 + 21824000^2 = 121\,984064^2$

$1232\,0015936^2 + 220224000^2 = 12321\,984064^2$

$123432\,0015936^2 + 2204224000^2 = 1234321\,984064^2$ (5.992)

$0013951^2 + 1986000^2 = 1\,986049^2$

$12\,0013951^2 + 21846000^2 = 121\,986049^2$

$1232\,0013951^2 + 220446000^2 = 12321\,986049^2$

$123432\,0013951^2 + 2206446000^2 = 1234321\,986049^2$ (5.993)

$0011964^2 + 1988000^2 = 1\,988036^2$

$12\,0011964^2 + 21868000^2 = 121\,988036^2$

$1232\,0011964^2 + 220668000^2 = 12321\,988036^2$

$123432\,0011964^2 + 2208668000^2 = 1234321\,988036^2$ (5.994)

$0009975^2 + 1990000^2 = 1\,990025^2$

$12\,0009975^2 + 21890000^2 = 121\,990025^2$

$1232\,0009975^2 + 220890000^2 = 12321\,990025^2$

$123432\,0009975^2 + 2210890000^2 = 1234321\,990025^2$ (5.995)

$0007984^2 + 1992000^2 = 1\,992016^2$

$12\,0007984^2 + 21912000^2 = 121\,992016^2$

$1232\,0007984^2 + 221112000^2 = 12321\,992016^2$

$123432\,0007984^2 + 2213112000^2 = 1234321\,992016^2$ (5.996)

$0005991^2 + 1994000^2 = 1\,994009^2$

$12\,0005991^2 + 21934000^2 = 121\,994009^2$

$1232\,0005991^2 + 221334000^2 = 12321\,994009^2$

$123432\,0005991^2 + 2215334000^2 = 1234321\,994009^2$ (5.997)

$0003996^2 + 1996000^2 = 1\,996004^2$

$12\,0003996^2 + 21956000^2 = 121\,996004^2$

$1232\,0003996^2 + 221556000^2 = 12321\,996004^2$

$123432\,0003996^2 + 2217556000^2 = 1234321\,996004^2$ (5.998)

$0001999^2 + 1998000^2 = 1\,998001^2$

$12\,0001999^2 + 21978000^2 = 121\,998001^2$

$1232\,0001999^2 + 221778000^2 = 12321\,998001^2$

$123432\,0001999^2 + 2219778000^2 = 1234321\,998001^2$ (5.999)

Based on above 999 pattterns, below are some remarks:

Remark 8. *From the results appearing in subsections 5.1, 5.2, 5.3 ..., 5.9 5.10, it is interesting to observe that the six digits in each case forms perfect square. See below:*

$$
\begin{aligned}
Equation \ (4.1) \quad &\Rightarrow 000001 = 1^2 \\
Equation \ (4.2) \quad &\Rightarrow 000004 = 2^2 \\
Equation \ (4.3) \quad &\Rightarrow 000009 = 3^2 \\
\cdots \quad \cdots \qquad &\qquad \cdots \quad \cdots \\
\cdots \quad \cdots \qquad &\qquad \cdots \quad \cdots \\
Equation \ (4.997) \quad &\Rightarrow 994009 = 997^2 \\
Equation \ (4.998) \quad &\Rightarrow 996004 = 998^2 \\
Equation \ (4.999) \quad &\Rightarrow 998001 = 999^2.
\end{aligned}
$$

Remark 9. *In this paper, we have extended the subsections 2.1, 2.2 and 2.3. These extensions give respectively, 9, 99 and 999 results. Extending the subsections 2.4, 2.5, etc. we get the results 9999, 99999, etc. These results are not written as they are too much, and also follow the similar lines of other subsections.*

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