

RESEARCH GROUP IN MATHEMATICAL INEQUALITIES AND APPLICATIONS

PROBLEM CORNER

Problem 4, (2008)

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A Triangle Inequality

Let a, b, c be the sides of $\triangle ABC$. Prove that

$$\sum \frac{a}{b+c} \left(\tan^4 \frac{B}{2} + \tan^4 \frac{C}{2} \right) \geq \frac{1}{3}.$$