PROBLEM CORNER

Problem 2, (2008)

Jian Liu

East China Jiaotong University
Nanchang City, Jiangxi Province,
330013, P.R. China

Email: 9sin9@163.com

Let P be an interior point of triangle ABC, the pedal triangle and the cevian triangle of P are DEF, LMN, respectively. Prove that

$$perimeter(LMN) \geqslant perimeter(DEF),$$

with equality if and only if P is the orthocenter of ABC.