

METRICAL RELATIONS BETWEEN THE IMPORTANT LINES IN A TRIANGLE

In this note some original and very interesting metrical relations involving certain important lines in a triangle are given. For example (Theorem 2), if ABC is a nonisosceles triangle and m_a, s_a, α denote the median, the simedian drawing by A , and the angle between m_a and s_a , respectively, then we have

$$\cos A = \frac{m_a \cos \alpha - s_a}{m_a - s_a \cos \alpha} \quad \text{or} \quad \frac{\sin \angle (h_a, s_a)}{\sin \angle (h_a, m_a)} = \cos A$$

(the simedian is the symmetric of the bisectrix with respect to the median).

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