

ROMANIAN MATHEMATICAL MAGAZINE

In ΔABC the following relationship holds:

$$\sin A + \sin B + \sin C \geq \frac{3\sqrt{3}r}{R}$$

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Solution by Daniel Sitaru-Romania

$$\sin A + \sin B + \sin C = \sum_{cyc} \sin A = \sum_{cyc} \frac{a}{2R} = \frac{1}{2R} \sum_{cyc} a = \frac{2s}{2R} \stackrel{MITRINOVICI}{\geq} \frac{3\sqrt{3}r}{R}$$

Equality holds for $A = B = C$.