ROMANIAN MATHEMATICAL MAGAZINE

J.2433 In ΔABC the following relationship holds

$$6r\min\{a,b,c\} \le 2Rs \le 3R\max\{a,b,c\}$$

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We have $a,b,c \ge \min\{a,b,c\}$ and $a,b,c \le \max\{a,b,c\}$.

Using Euler inequality $R \ge 2r$, we obtain

$$2Rs = R(a+b+c) \ge R(\min\{a,b,c\} + \min\{a,b,c\} + \min\{a,b,c\}) \ge 6r\min\{a,b,c\}$$

and $2Rs = R(a+b+c) \le R(\max\{a,b,c\} + \max\{a,b,c\} + \max\{a,b,c\}) \le$

$$\le 3R\max\{a,b,c\}.$$

Equality holds if and only if ΔABC is equilateral.