

# ROMANIAN MATHEMATICAL MAGAZINE

If  $a, b > 0$ ,  $a + b = ab$  then:

$$\frac{1}{a^2} + \frac{1}{b^2} \geq \frac{1}{2}$$

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*Solution by Mirsadix Muzefferov-Azerbaijan*

$$a + b = ab \Rightarrow b = ab - a = a(b - 1) \Rightarrow \frac{1}{a} = \frac{b - 1}{b}$$

$$\frac{1}{a^2} + \frac{1}{b^2} = \frac{(b - 1)^2}{b^2} + \frac{1}{b^2} \stackrel{\text{Bergstrom}}{\geq} \frac{(b - 1 + 1)^2}{b^2 + b^2} = \frac{b^2}{2b^2} = \frac{1}{2}$$

*Equality holds for  $a = b = 2$ .*