Zadatak 14.   Koliki je numerički ekscentricitet elipse ako je linearni ekscentricitet aritmetič-ka sredina duljina velike i male poluosi?

Rješenje.

$$\varepsilon = ?$$

$$e = \frac{a+b}{2}$$

$$e^2 = a^2 - b^2$$

$$\left(\frac{a+b}{2}\right)^2 = (a-b)(a+b) \quad / : (a+b)$$

$$\frac{a+b}{4} = a - b \quad / \cdot 4$$

$$a + b = 4a - 4b$$

$$3a = 5b$$

$$a = \frac{5}{3}b$$

$$e = \frac{\frac{5}{3}b + b}{2} = \frac{\frac{8}{3}b}{2} = \frac{4}{3}b$$

$$\varepsilon = \frac{e}{a}$$

$$\varepsilon = \frac{\frac{4}{3}b}{\frac{5}{3}b}$$

$$\boxed{\varepsilon = \frac{4}{5}}$$