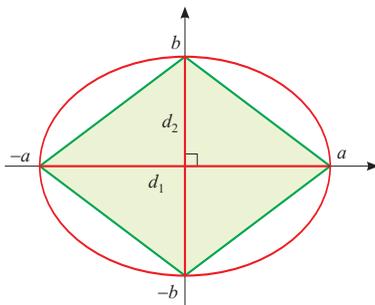


Zadatak 18. Kraća dijagonala romba je mala os, a dulja velika os elipse $b^2x^2 + a^2y^2 = a^2b^2$. Ako je razlika duljina dijagonala romba 4, a površina romba 96, kako glasi jednadžba elipse?

Rješenje.



$$d_1 = 2a$$

$$d_2 = 2b$$

$$d_1 - d_2 = 4 \implies d_1 = d_2 + 4$$

$$P = 96$$

$$\frac{d_1 \cdot d_2}{2} = 96 \quad / \cdot 2$$

$$d_1 \cdot d_2 = 192$$

$$(d_2 + 4) \cdot d_2 = 192$$

$$d_2^2 + 4d_2 - 192 = 0$$

$$(d_2)_{1,2} = \frac{-4 \pm \sqrt{-4 \pm 28}}{2} \implies d_2 = 12 \quad (d_2 > 0)$$

$$d_2 = 2b \implies b = 6$$

$$d_1 = 12 + 4 = 16$$

$$2a = 16 \implies a = 8$$

$$36x^2 + 64y^2 = 36 \cdot 64 \quad / : 36 \cdot 64$$

$$\frac{x^2}{64} + \frac{y^2}{36} = 1$$