

Zadatak 2. U kojim točkama pravac $3x - 4y - 24 = 0$ siječe elipsu $\frac{x^2}{16} + \frac{y^2}{9} = 1$?

Rješenje.

$$p \dots 3x - 4y - 24 = 0 \implies y = \frac{3}{4}x - 6$$

$$E \dots \frac{x^2}{16} + \frac{y^2}{9} = 1$$

$$p \cap E \dots \frac{x^2}{16} + \frac{\left(\frac{3}{4}x - 6\right)^2}{9} = 1 \quad / \cdot 144$$

$$9x^2 + 16 \cdot \left(\frac{9}{16}x^2 - 9x + 36\right) = 144$$

$$9x^2 + 9x^2 - 144x + 576 = 144$$

$$18x^2 - 144x + 432 = 0 \quad / : 2$$

$$9x^2 - 72x + 216 = 0$$

$$x_{1,2} = \frac{72 \pm \sqrt{5184 - 7776}}{18} \quad D < 0 \text{ elipsa i pravac se ne sijeku}$$