

Zadatak 7. Osnovica jednakokravnog trokuta je na pravcu $2x + 3y = 0$. Jedan krak trokuta leži na pravcu $5x - 12y = 0$. Kojem pravcu pripada drugi krak ako taj pravac prolazi točkom $T(2, 6)$?

Rješenje.

$$T(2, 6)$$

$$a \dots 2x + 3y = 0$$

$$b \dots \underline{5x - 12y = 0}$$

$$y = -\frac{2}{3}x$$

$$\underline{y = \frac{5}{12}x}$$

$$\operatorname{tg} \varphi \left| \frac{\frac{5}{12} + \frac{2}{3}}{1 + \frac{5}{12} \cdot \left(-\frac{2}{3}\right)} \right| = \left| \frac{\frac{12}{12}}{\frac{12}{18}} \right| = \frac{3}{2}$$

$$\varphi = \sphericalangle(a, b') \implies$$

$$\left| \frac{k + \frac{2}{3}}{1 - \frac{2}{3} \cdot k} \right| = \frac{3}{2}$$

$$\left| \frac{3k + 2}{3 - 2k} \right| = \frac{3}{2}$$

$$2|3k + 2| = 3|3 - 2k|$$

$$3k + 2 < 0 \implies k < -\frac{2}{5}$$

$$3 - 2k < 0 \implies k > \frac{3}{2}$$

$$x \in \left\langle -\frac{2}{5}, \frac{3}{2} \right\rangle$$

$$2(3k + 2) = 3(3 - 2k)$$

$$6k + 4 = 9 - 6k$$

$$12k = 5$$

$$k = \frac{5}{12} \text{ (koeficijent od } b)$$

$$x \in \left\langle -\infty, -\frac{2}{5} \right\rangle \cup \left\langle \frac{3}{2}, \infty \right\rangle$$

$$2(3k + 2) = -3(3 - 2k)$$

$$6k + 4 = -9 + 6k$$

$$4 = -9$$

(nema rješenja)

k ne možemo dobiti, znači pravac je paralelan s y -osi i prolazi točkom $T(2, 6)$ pa je njegova jednadžba:

$$x = 2$$