

Zadatak 3.

Dokaži da je trokut omeđen pravcima $2x - 3y + 5 = 0$, $8x + y - 45 = 0$ i $4x + 7y - 3 = 0$ jednakokračan.

Rješenje.

$$a \dots 2x - 3y + 5 = 0$$

$$b \dots 8x + y - 45 = 0$$

$$c \dots \frac{4x + 7y - 3}{3} = 0$$

$$3y = 2x + 5$$

$$y = -8x + 45$$

$$\frac{7y}{7} = \frac{-4x + 3}{7}$$

$$y = \frac{2}{3}x + \frac{5}{3}$$

$$y = -8x + 45$$

$$\frac{y}{y} = \frac{-\frac{4}{7}x + \frac{3}{7}}{y}$$

$$k_a = \frac{2}{3}, \quad k_b = -8, \quad k_c = -\frac{4}{7}$$

$$\operatorname{tg} \gamma = \operatorname{tg} \measuredangle(a, b) = \left| \frac{k_b - k_a}{1 + k_a k_b} \right| = \left| \frac{-8 + \frac{2}{3}}{1 + \frac{2}{3} \cdot (-8)} \right| = \left| \frac{\frac{-26}{3}}{-\frac{13}{3}} \right| = 2$$

$$\operatorname{tg} \alpha = \operatorname{tg} \measuredangle(b, c) = \left| \frac{k_c - k_b}{1 + k_b k_c} \right| = \left| \frac{-\frac{4}{7} + 8}{1 + (-8) \cdot (-\frac{4}{7})} \right| = \left| \frac{\frac{52}{7}}{\frac{32}{7}} \right| = \frac{13}{8}$$

$$\operatorname{tg} \beta = \operatorname{tg} \measuredangle(a, c) = \left| \frac{k_c - k_a}{1 + k_a k_c} \right| = \left| \frac{-\frac{4}{7} - \frac{2}{3}}{1 + \frac{2}{3} \cdot (-\frac{4}{7})} \right| = \left| \frac{\frac{-26}{21}}{\frac{13}{21}} \right| = 2$$

$\operatorname{tg} \gamma = \operatorname{tg} \beta \implies$ trokut je jednakokračan.