

**Zadatak 8.** Točke  $A(-2, 1)$ ,  $B(6, -5)$  i  $C(2, 4)$  vrhovi su trokuta  $ABC$ . Odredi duljinu odsječka simetrale kuta  $\alpha$  pri vrhu  $A$  trokuta koji je unutar trokuta.

*Rješenje.*

$$A(-2, 1)$$

$$B(6, -5)$$

$$C(2, 4)$$

$$|\overline{AB}| = \sqrt{(6+2)^2 + (5-1)^2} = \sqrt{64+36} = 10$$

$$|\overline{AC}| = \sqrt{(2+2)^2 + (4-1)^2} = \sqrt{16+9} = 5$$

$$\frac{|\overline{CD}|}{|\overline{DB}|} = \frac{|\overline{AC}|}{|\overline{AB}|} = \frac{5}{10} = \frac{1}{2} = \lambda$$

$$x_D = \frac{x_C + \lambda x_B}{1 + \lambda} = \frac{2 + \frac{1}{2} \cdot 6}{1 + \frac{1}{2}} = \frac{\frac{5}{2}}{\frac{3}{2}} = \frac{5}{3}$$

$$y_D = \frac{y_C + \lambda y_B}{1 + \lambda} = \frac{4 + \frac{1}{2} \cdot (-5)}{1 + \frac{1}{2}} = \frac{\frac{3}{2}}{\frac{3}{2}} = 1$$

$$D\left(\frac{10}{3}, 1\right)$$

$$|\overline{AD}| = \sqrt{\left(\frac{10}{3} + 2\right)^2 + (1-1)^2} = \sqrt{\left(\frac{16}{3}\right)^2} = \frac{16}{3}$$