



Zadatak 39. Koliki kut zatvara pravac $y = 3x - 1$ s kružnicom $x^2 + y^2 - 4x - 1 = 0$?

Rješenje.

$$x^2 + (3x - 1)^2 - 4x - 1 = 0$$

$$x^2 + 9x^2 - 6x + 1 - 4x - 1 = 0$$

$$10x^2 - 10x = 0$$

$$10x(x - 1) = 0$$

$$x_1 = 0, \quad y_1 = -1$$

$$x_2 = 1, \quad y_2 = 2$$

Sjecišta pravca i kružnice su $D_1 = (0, -1)$, $D_2(1, 2)$.

$$(x_1 - p)(x - p) + (y_1 - q)(y - q) = r^2$$

$$(0 - 2)(x - 2) + (-1 - 0)(y - 0) = 5$$

$$-2x + 4 - y = 5$$

$$y = -2x - 1$$

$$\operatorname{tg} \alpha = \left| \frac{k_2 - k_1}{1 + k_1 k_2} \right| = \left| \frac{-2 - 3}{1 - 6} \right| = 1$$

$$\alpha = 45^\circ.$$