

Zadatak 16.

Napiši jednadžbu kružnice koja dira pravce

$x - y - 2 = 0$ i $x - y + 2 = 0$ i prolazi ishodištem koordinatnog sustava.

Rješenje.

$$y = x - 2, \quad y = x + 2$$

$$r^2(1 + 1) = (q - p + 2)^2$$

$$r^2(1 + 1) = (q - p - 2)^2$$

$$r^2 = p^2 + q^2$$

$$0 = (q - p + 2)^2 - (q - p - 2)^2$$

$$r^2 = p^2 + q^2$$

$$0 = (q - p + 2 - q + p + 2)(q - p - 2 + q - p + 2)$$

$$r^2 = p^2 + q^2$$

$$0 = 4(2q - 2p) \implies p = q$$

$$r^2 = p^2 + q^2$$

$$2r^2 = (p - p + 2)^2$$

$$r^2 = 2$$

$$2 = p^2 + p^2$$

$$p_1 = 1, \quad p_2 = -1$$

$$q_1 = 1, \quad q_2 = -1$$

$$(x - 1)^2 + (y - 1)^2 = 2,$$

$$(x + 1)^2 + (y + 1)^2 = 2.$$