Zadatak 17. Pravci $4x-3y+10=0$ i $4x-3y-30=0$ tangente su kružnice kojoj je središte na pravcu $2x+y=0$. Odredi jednadžbu kružnice.

Rješenje. $y=\frac{4}{3}x+\frac{10}{3}$, $y=\frac{4}{3}x-10$, $S(p,-2p)$

$$r^2\left(1+\frac{16}{3}\right)=\left(-2p-\frac{4}{3}p-\frac{10}{3}\right)^2$$

$$r^2\left(1+\frac{16}{9}\right)=\left(-2p-\frac{4}{3}p+10\right)^2$$

$$\frac{25}{9}r^2=\left(-\frac{10}{3}p-\frac{10}{3}\right)^2$$

$$\frac{25}{9}r^2=\left(-\frac{10}{3}p+10\right)^2$$

$$0=\left(-\frac{10}{3}p-\frac{10}{3}+\frac{10}{3}p-10\right)\left(-\frac{10}{3}p-\frac{10}{3}-\frac{10}{3}p+10\right)$$

$$0=-\frac{40}{3}\left(-\frac{20}{3}p+\frac{20}{3}\right)$$

$$p=1$$

$$q=-2$$

$$\frac{25}{9}r^2=\frac{400}{9}$$

$$r^2=16$$

$$(x-1)^2+(y+2)^2=16.$$