

Zadatak 47. Odredi koeficijent a tako da žarište parabole $y = ax^2 - 1$ bude u ishodištu koordinatnog sustava.

Rješenje.

$$F(0, 0)$$

$$y = ax^2 - 1$$

$$y + 1 = ax^2$$

$$x^2 = \frac{1}{a}(y + 1) \implies T(0, -1), \quad \frac{1}{a} = 2p, \quad a = \frac{1}{2p}$$

$$\frac{p}{2} = y_F - y_T = 0 + 1 = 1, \quad p = 2$$

$$a = \frac{1}{2p} \implies a = \frac{1}{4}$$