

M3 - Rovnice

$$x - 3x = -5 - 2$$

$$-2x = -7$$

$$x = \frac{7}{2}$$

$$1 + \sqrt{x + 11} = x$$

$$\sqrt{x + 11} = (x - 1)$$

$$x + 11 = x^2 - 2x + 1$$

$$x^2 - 3x - 10 = 0$$

$$2 - 5 = -3; 2 * (-5) = -10$$

$$(x + 2) * (x - 5) = 0$$

$$x_1 = 5; x_2 = -2$$

ZK.:

$$L(5) = 1 + \sqrt{5 + 11} = 5$$

$$P(5) = 5$$

$$L=P$$

$$L(-2) = 1 + \sqrt{(-2) + 11} = 4$$

$$P(-2) = -2$$

D(R):

$$x + 11 \geq 0$$

$$x \geq -11$$

$$x - 1 \geq 0$$

$$x \geq 1$$

$$D(R) = < 1, \infty)$$

$$2^{2x+1} + 4^{x+1} + 16^{\frac{x}{2}} = 28$$

$$2^{2x+1} + 2^{2x+2} + 2^{2x} = 28$$

$$4^x * 2 + 4^x * 4 + 4^x = 4 * 7$$

$$4^x = 4$$

$$x = 1$$

ZK.:

$$2^3 + 4^2 + 16^{\frac{1}{2}} = 28$$

$$x^2 - 1 = (x + 1) * (x - 1)$$

$$x^3 - 1 = (x - 1) * (x^2 + x + 1)$$

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

$$x^n - 1 = (x - 1) * (x^{n-1} + x^{n-2} + \dots + x + 1)$$

Kvadratická rovnice

f: $ax^2 + bx + c = 0$

$$x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4 * a * c}}{2a}$$

-> Body protínající osu x

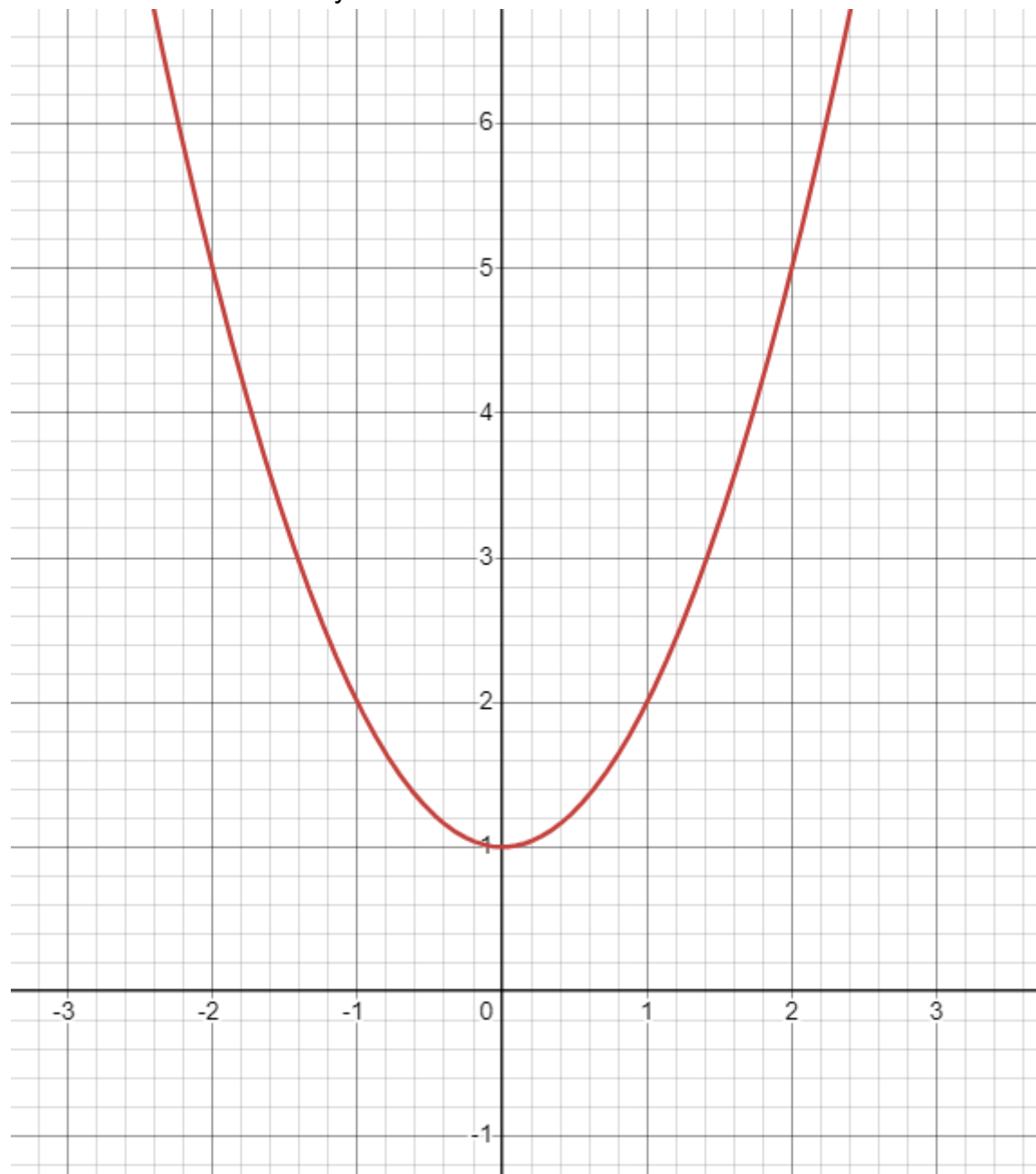
$$\sqrt{b^2 - 4 * a * c} = \sqrt{D}$$

$$y = x^2 + 1$$

a = 1 -> Rozpětí

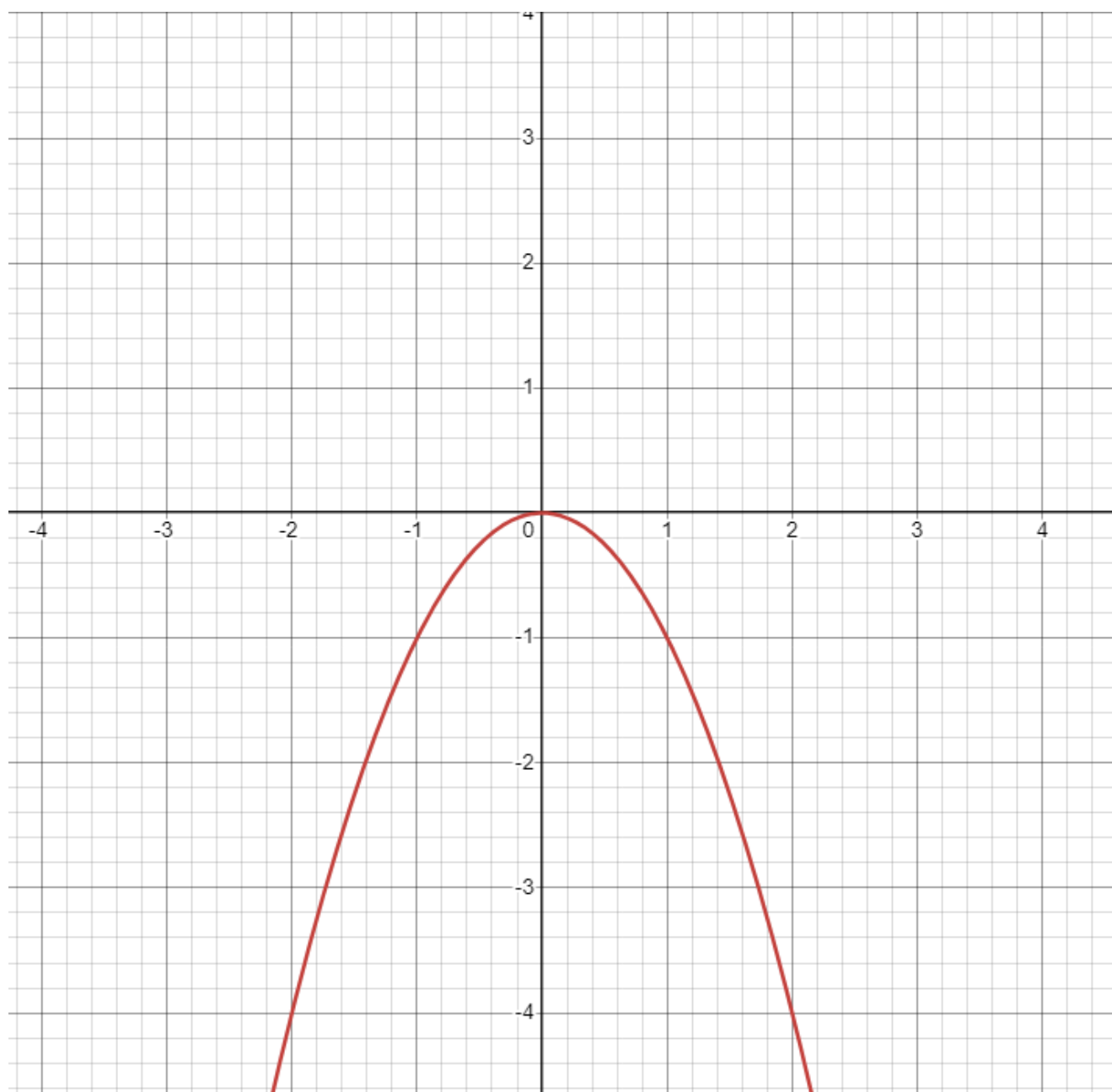
b = 0 -> Posun vrcholu

$c = 1 \rightarrow$ Posunutí na ose y



$$y = -x^2$$

$a < 0 \rightarrow$ Otočení



-> Graf kvadratické rovnice - Parabola