

A1

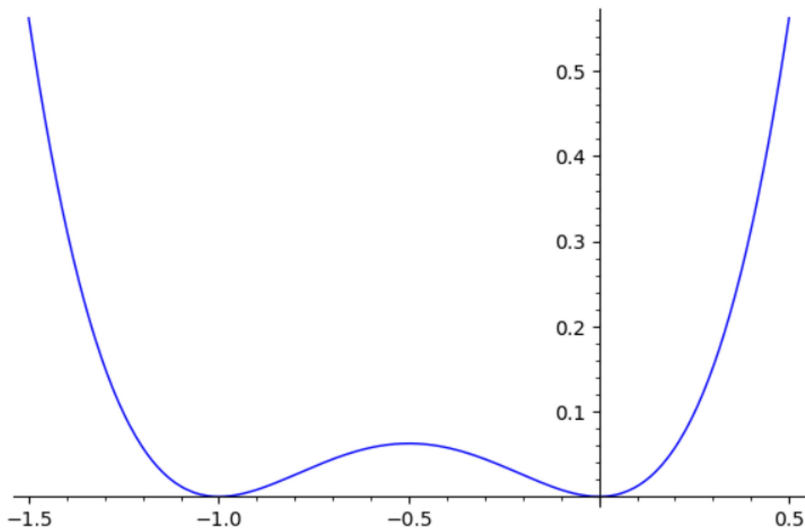
A1 Nullstellen

Berechnen Sie die reellen Nullstellen folgender Polynome ohne Taschenrechner:

a) $p(x) = x^4 + 2x^3 + x^2$

b) $p(x) = x^2 - 2x - 15$

$$\begin{aligned} \text{a) } x^4 + 2x^3 + x^2 &= x^2 \cdot (x^2 + 2x + 1) & x_1 &= 0 \\ x^2 + 2x + 1 &= (x + 1)^2 & x_2 &= -1 \end{aligned}$$



b) $p(x) = x^2 - 2x - 15$

$$x_{1/2} = \frac{2 \pm \sqrt{4 + 60}}{2} = \frac{2 \pm 8}{2}$$

$$x_1 = 5, \quad x_2 = -3$$

