

Mathematik * Jahrgangsstufe 9 * Lösungen zu Aufgaben aus dem Lehrbuch

S.76 / Nr. 7a

$$f(x) = x^2 - 6x + 9 = (x-3)^2$$

Scheitel S(3/0)

$$f(x) = 0 \Leftrightarrow x = 3 \text{ ("doppelte" Nullstelle)}$$

Nr. 7b

$$f(x) = x^2 - 6x + 4 = (x-3)^2 - 5$$

S(3/-5)

$$f(x) = 0 \Leftrightarrow x-3 = \pm\sqrt{5}$$

$$x_1 = 3 + \sqrt{5} \approx 5,24 \text{ und } x_2 = 3 - \sqrt{5} \approx 0,76$$

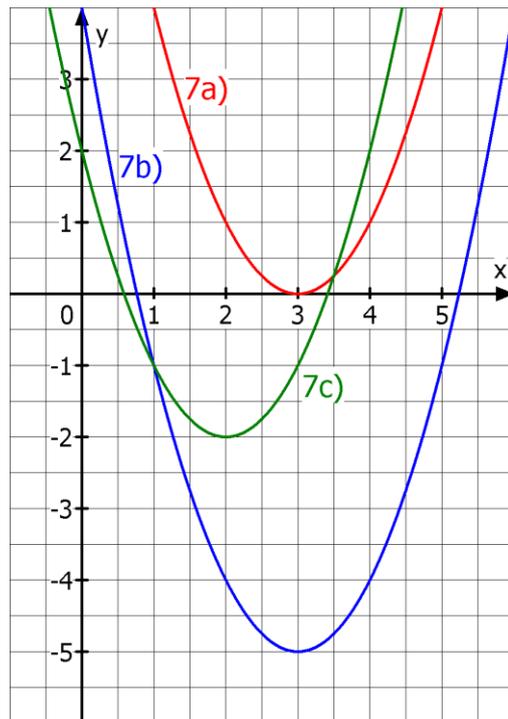
Nr. 7c

$$f(x) = x^2 + 2 - 4x = (x-2)^2 - 2$$

S(2/-2)

$$f(x) = 0 \Leftrightarrow x-2 = \pm\sqrt{2}$$

$$x_1 = 2 + \sqrt{2} \approx 3,41 \text{ und } x_2 = 2 - \sqrt{2} \approx 0,59$$



S.76 / Nr. 8a

$$x^2 - 4x + 1 = 0 \Leftrightarrow x^2 - 4x + 2^2 - 2^2 + 1 = 0 \Leftrightarrow (x-2)^2 = 3 \Leftrightarrow x-2 = \pm\sqrt{3} \Leftrightarrow$$

$$x_{1/2} = 2 \pm \sqrt{3} \quad (x_1 = 2 + \sqrt{3} \approx 3,73 \text{ und } x_2 = 2 - \sqrt{3} \approx 0,27)$$

Nr. 8c

$$10 = x^2 \Leftrightarrow x_{1/2} = \pm\sqrt{10} \approx \pm 3,16$$

Nr. 8e

$$(x+2)^2 + 3 = 0 \Leftrightarrow (x+2)^2 = -3 \text{ keine Lösung! } L = \{ \}$$