

$$1) a) \begin{array}{l} \text{I} \quad 3a + b - c = 20 \\ \text{II} \quad 2a + 2b = 4 \\ \text{III} \quad 3a + c = -3 \end{array} \left. \begin{array}{l} \\ \\ \end{array} \right\} \oplus \checkmark$$

$$\begin{array}{l} \text{I} \quad 3a + b - c = 20 \\ \text{II} \quad 2a + 2b = 4 \\ \text{III}' \quad 6a + b = 17 \quad |(-2)| \oplus \checkmark \\ \hline -10a = -30 \Rightarrow a = 3 \quad \checkmark \quad b = -1 \quad \checkmark \quad c = -12 \quad \checkmark \end{array}$$

5

$$b) \begin{array}{l} \text{I} \quad 5a + 2b = -15 \quad | \cdot 3 \\ \text{II} \quad -3a - 3b = 9 \quad | \cdot 5 \end{array} \left. \begin{array}{l} \\ \end{array} \right\} \oplus \checkmark$$

$$\text{I} \quad 15a + 6b = -45$$

$$\text{II} \quad -15a - 15b = 45$$

$$\text{I} + \text{II} \quad -9b = 0 \Rightarrow b = 0 \quad \checkmark \quad a = -3 \quad \checkmark$$

3

$$2) a) x^2 + x - 56 = 0 \quad x_{1/2} = \frac{-1 \pm \sqrt{225}}{2} = \frac{-1 \pm 15}{2} \quad \checkmark$$

$$x_1 = -8 \quad \checkmark \checkmark$$

$$x_2 = 7$$

5

$$b) -0,5x(x+3) = 0 \quad x_1 = 0 \quad \checkmark \quad x_2 = -3 \quad \checkmark$$

$$3) a) f(x) = -0,5x^2 + x + 1,5 \quad T(0|1,5) \quad \checkmark$$

$$\text{Nst} \quad x_{1/2} = \frac{-1 \pm \sqrt{4}}{-1} = \frac{-1 \pm 2}{-1} \quad \checkmark \quad x_1 = 3 \quad \checkmark \quad N_1(3|0) \quad \checkmark \quad x_2 = -1 \quad \checkmark \quad N_2(-1|0)$$

4

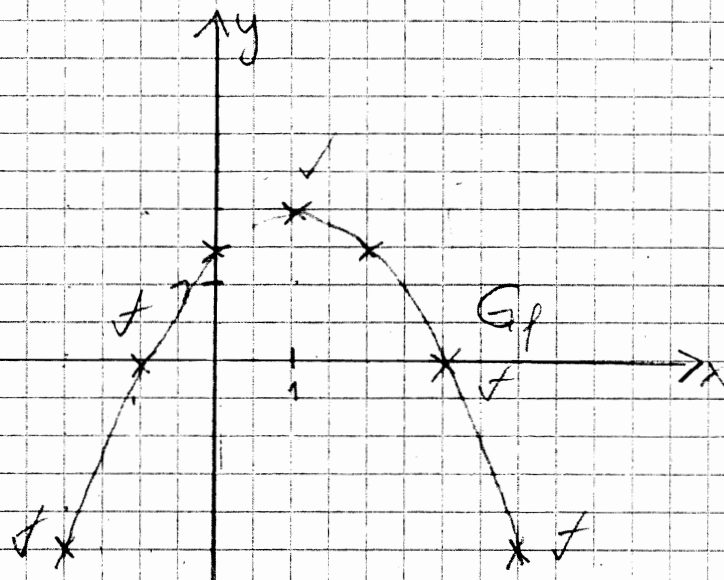
$$b) x_s = \frac{-b}{2a} = \frac{-1}{2(-0,5)} = 1 \quad \checkmark \quad \text{oder} \quad x_s = \frac{x_1 + x_2}{2} = \frac{3 - 1}{2} = 1$$

$$y_s = -0,5 \cdot 1^2 + 1 + 1,5 = 2 \quad \checkmark \quad S(1|2) \quad \checkmark$$

$$W =]-\infty; 2] \quad \checkmark$$

3

c)



3

$$a) -0,5x^2 + x + 1,5 = -ax + 1,5 \quad \checkmark$$

$$-0,5x^2 + x + ax = 0 \quad \checkmark$$

$$-0,5x^2 + (1+a)x = 0 \quad \checkmark$$

$$\text{eine Lösung, falls } D=0 \Leftrightarrow D = (1+a)^2 - 1 = 0 \quad \checkmark$$

$$\Leftrightarrow a = -1 \quad \checkmark$$

5

$$4) p(x) = a(x-x_s)^2 + y_s$$

$$a(-1-1)^2 + 10 = 2 \quad \checkmark$$

$$4a + 10 = 2 \Rightarrow a = -2 \quad \checkmark$$

4

$$p(x) = -2(x-1)^2 + 10 = -2(x^2 - 2x + 1) + 10 \quad \checkmark$$

$$= -2x^2 + 4x + 8 \quad \checkmark$$

$$5) a) -0,1x^2 + 0,8x + 1,8 = 0 \quad \checkmark$$

$$x_{1,2} = \frac{-0,8 \pm \sqrt{0,8^2 - 4(-0,1) \cdot 1,8}}{2(-0,1)} \quad \checkmark$$

$$(x_1 \approx -1,83) \quad \checkmark$$

$$x_2 \approx 9,83 \quad \checkmark$$

3

Der Wurf ist 9,83 m weit $\checkmark$

$$b) p(x) = g(x) \quad \checkmark$$

$$-0,1x^2 + 0,8x + 1,8 = 0,01x \quad \checkmark$$

4

$$-0,1x^2 + 0,79x + 1,8 = 0 \quad \checkmark$$

$$x_1 \approx 9,74 \quad \checkmark (x_2 \approx -1,85) \quad \checkmark$$

Der Wurf ist 9,74 m weit. $\checkmark$

$\Sigma 39$