

① a) $(2x+1)^2 = 4x^2 + 3$

$4x^2 + 4x + 1 = 4x^2 + 3 \quad 4x = 2 \quad x = \frac{1}{2} \quad \mathbb{L} = \left\{ \frac{1}{2} \right\}$

2

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

$x^2 - 6x + 9 - (x^2 - 25) = 4 \quad \checkmark$

$x^2 - 6x + 9 - x^2 + 25 = 4 \quad -6x = -30 \quad x = 5 \quad \mathbb{L} = \{5\}$

4

② a) $(a^2 + b^2)^2 = a^4 + 2a^2b^2 + b^4 \quad \checkmark = a^4 + 6a^2b + 9b^2$

b) $(5x - 0,5x^2)^2 = 25x^2 - 5x^3 + 0,25x^4 \quad \checkmark$

3

③ $\frac{10}{4(x+1)} + \frac{2x}{x+1} - \frac{2x+1}{x-2} = 0$

$\mathbb{D} = \mathbb{R} \setminus \{-1, 2\} \quad \checkmark$

$\mathbb{H} = 4(x+1)(x-2) \quad \checkmark$

$10(x-2) + 2x \cdot 4(x-2) - (2x+1)4(x+1) = 0 \quad \checkmark$

$10x - 20 + 8x^2 - 16x - (2x^2 + 8x + 4x + 4) = 0$

$-6x - 20 - 8x - 4x - 4 = 0 \quad \checkmark$

$-16x = 24 \quad -18x = 24 \quad \checkmark$

$-x = \frac{4}{3} \quad x = -\frac{4}{3} \quad \checkmark \quad \mathbb{L} = \left\{ -\frac{4}{3} \right\} \quad \checkmark$

6

④ a) $m = \frac{25}{-5} = -\frac{1}{2} \quad \checkmark \quad -1 = -\frac{1}{2} \cdot 4 + t \quad t = 1 \quad y = -\frac{1}{2}x + 1 \quad \checkmark$

3

b) $T(0|1) \quad \checkmark \quad -\frac{1}{2}x + 1 = 0 \quad x = 2 \quad N(2|0) \quad \checkmark$

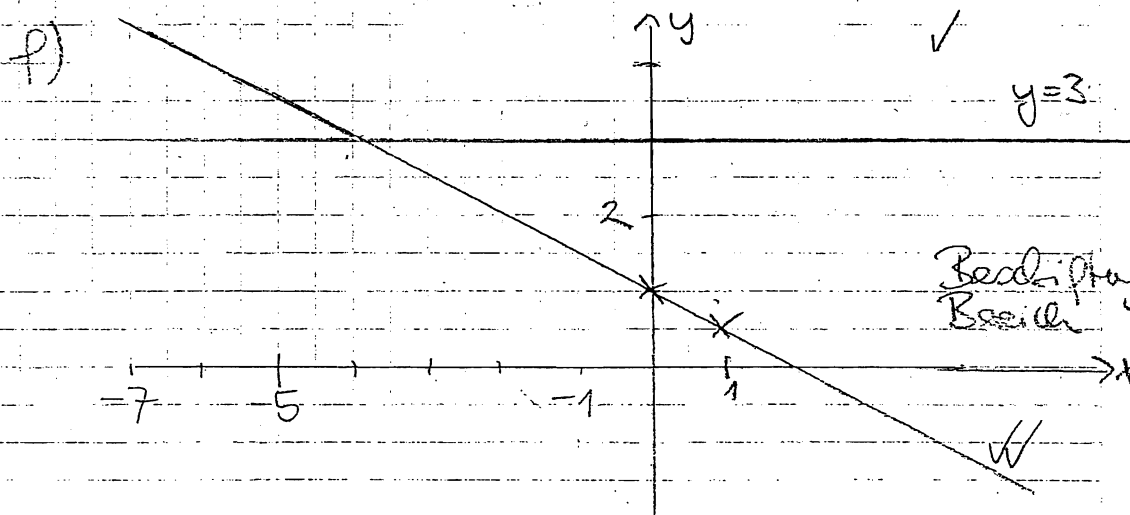
2

c) $-25 \left(-\frac{1}{2}\right) + 1 = \frac{25}{2} + 1 = \frac{27}{2} = 13,5 \Rightarrow P \notin g \quad \checkmark$

2

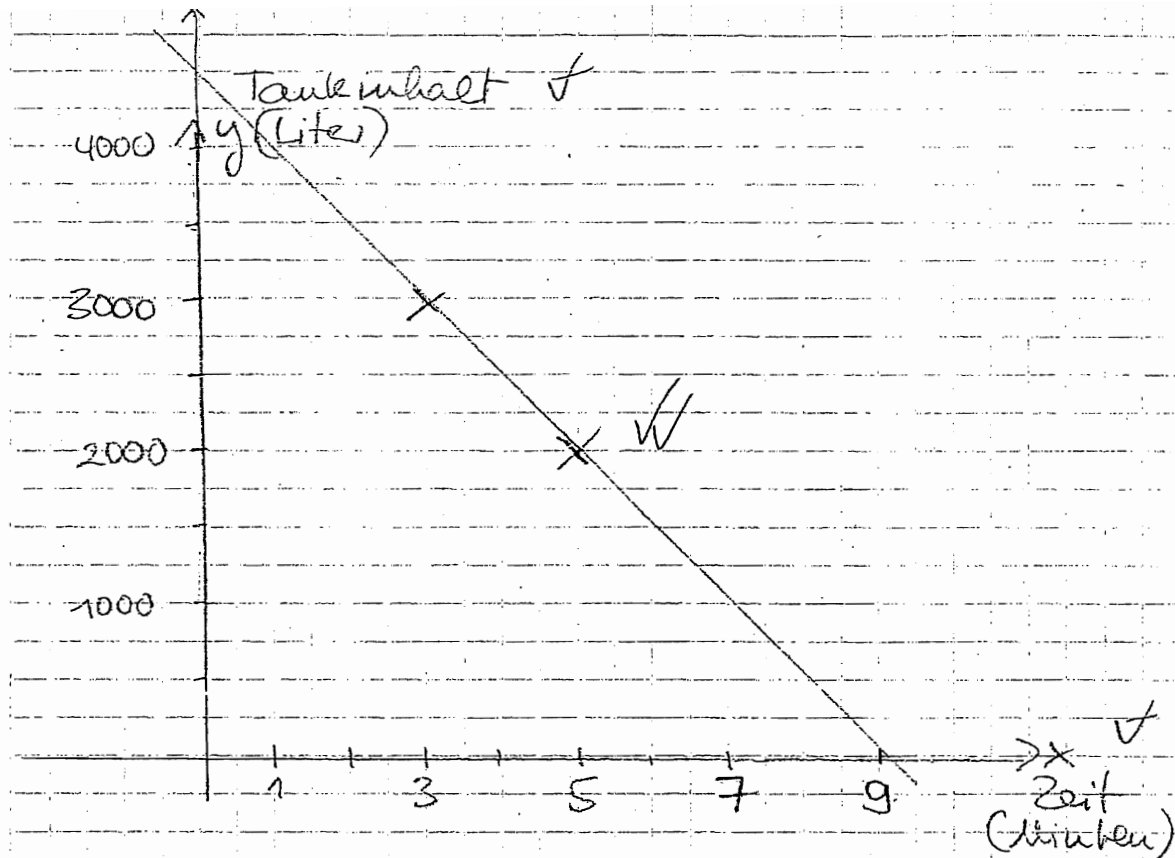
d) $y = 3$

1



4

3



a) $A(3|3000)$ $B(5|2000)$ ✓

3

$$m = \frac{1000}{2} = -500 \checkmark \quad 3000 = -500 \cdot 3 + t \quad t = 4500 \checkmark$$

$$y = -500x + 4500 \checkmark$$

1

b) 4500 Liter ✓

2,5

c) $-500x + 4500 = 0 \checkmark \quad x = 9 \checkmark$ Nach 9 Minuten ✓

2,5

d) $-500x + 4500 = 1000 \checkmark \quad x = 7 \checkmark$ Nach 7 " ✓

$\Sigma 39$