

$$1a) \frac{2x}{x-2} - \frac{1}{x+1} = 2 \quad | \cdot (x-2)(x+1)$$

$$\mathbb{D} = \mathbb{Q} \setminus \{2; -1\} \quad \checkmark$$

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

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

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

$$3x = -6$$

$$\underline{x = -2} \quad \checkmark$$

$$\mathbb{L} = \{-2\} \quad \checkmark$$

4P

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

$$\mathbb{D} = \mathbb{Q} \setminus \{0; 2\} \quad \checkmark$$

+

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

$$x+1 + x^2 - 2x - x + 2 = x^2 + x \quad \checkmark$$

$$-2x + 3 = x$$

$$3 = 3x$$

$$\Rightarrow \underline{x = 1} \quad \checkmark$$

$$\mathbb{L} = \{1\} \quad \checkmark$$

5P

$$2) \quad g: t = 2 \quad \checkmark; \quad S(4|1)$$

$$y = mx + t \Rightarrow 1 = m \cdot 4 + 2 \quad \checkmark \Rightarrow -1 = 4m \Rightarrow m = -\frac{1}{4} \quad \checkmark$$

$$\Rightarrow y = -\frac{1}{4}x + 2 \quad \checkmark$$

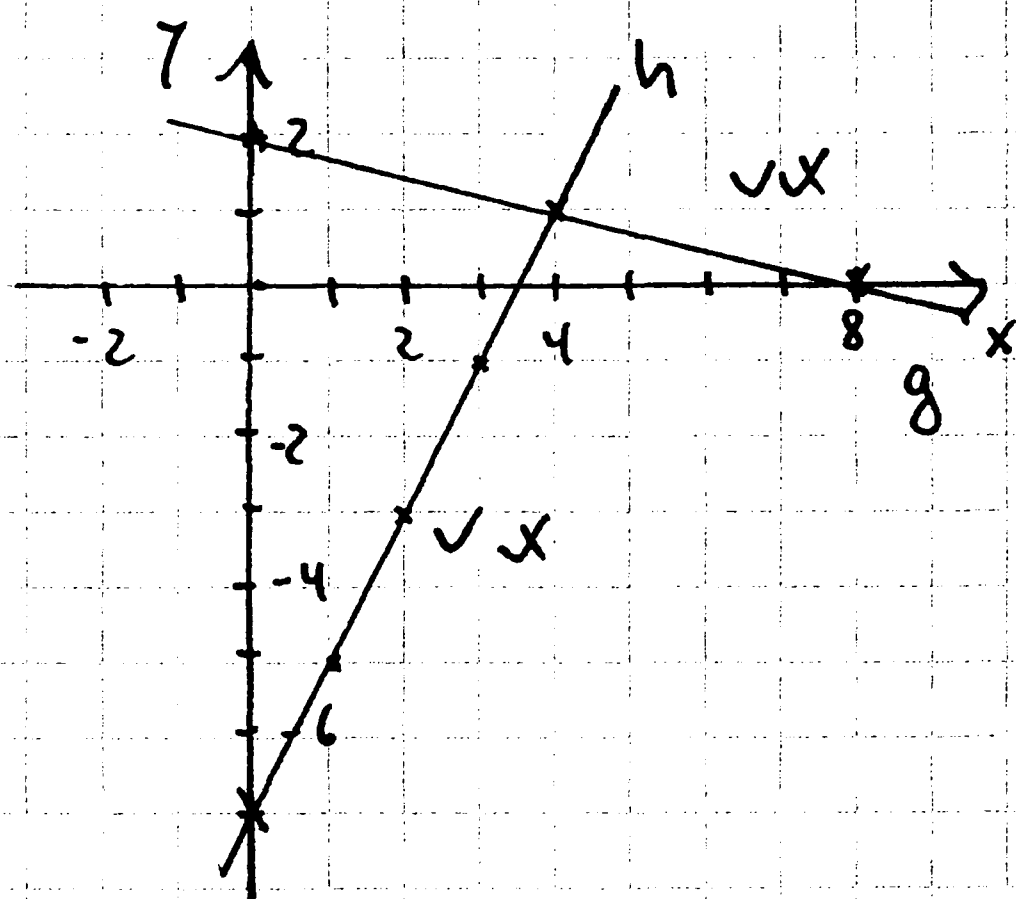
$$h: P(2|-3); \quad S(4|1)$$

$$m = \frac{-3-1}{2-4} = \frac{-4}{-2} = 2 \quad \checkmark$$

5P

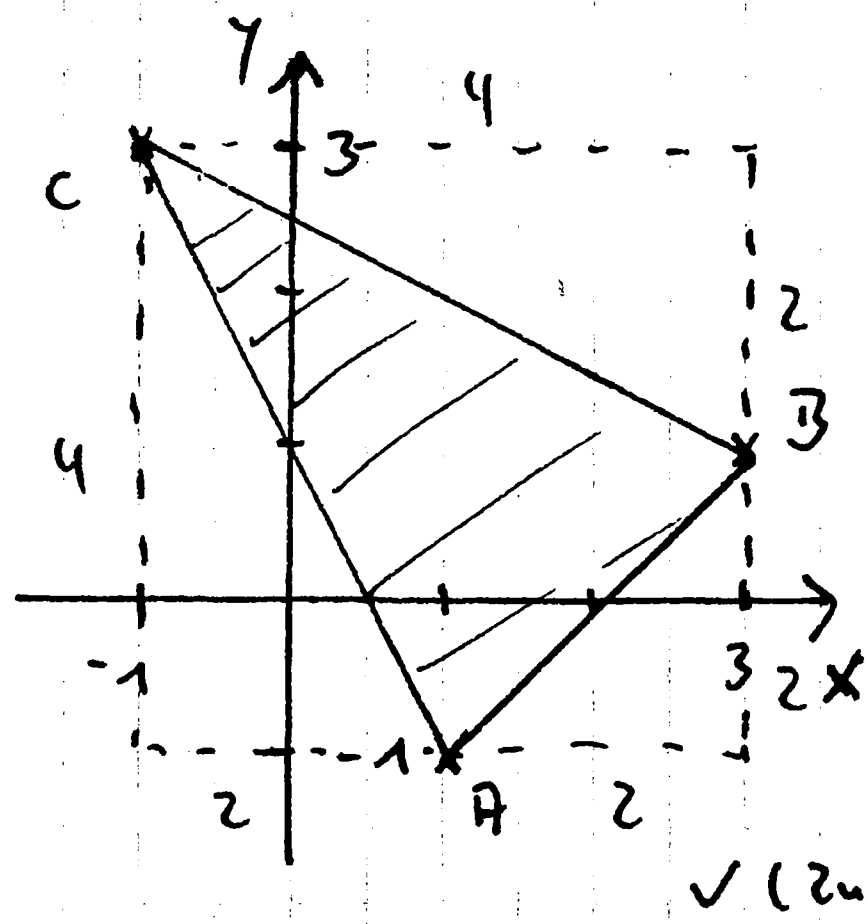
$$y = mx + t \Rightarrow -3 = 2 \cdot 2 + t \quad \checkmark \Rightarrow t = -7 \quad \checkmark \Rightarrow y = 2x - 7 \quad \checkmark$$

+



3P

3a)



$$\overline{AB} = \sqrt{2^2 + 2^2} = \sqrt{8} \approx 2,83 \text{ LE} \checkmark$$

$$\overline{BC} = \sqrt{4^2 + 2^2} = \sqrt{20} \approx 4,47 \text{ LE} \checkmark$$

$$\overline{AC} = \sqrt{2^2 + 4^2} = \sqrt{20} \approx 4,47 \text{ LE} \checkmark$$

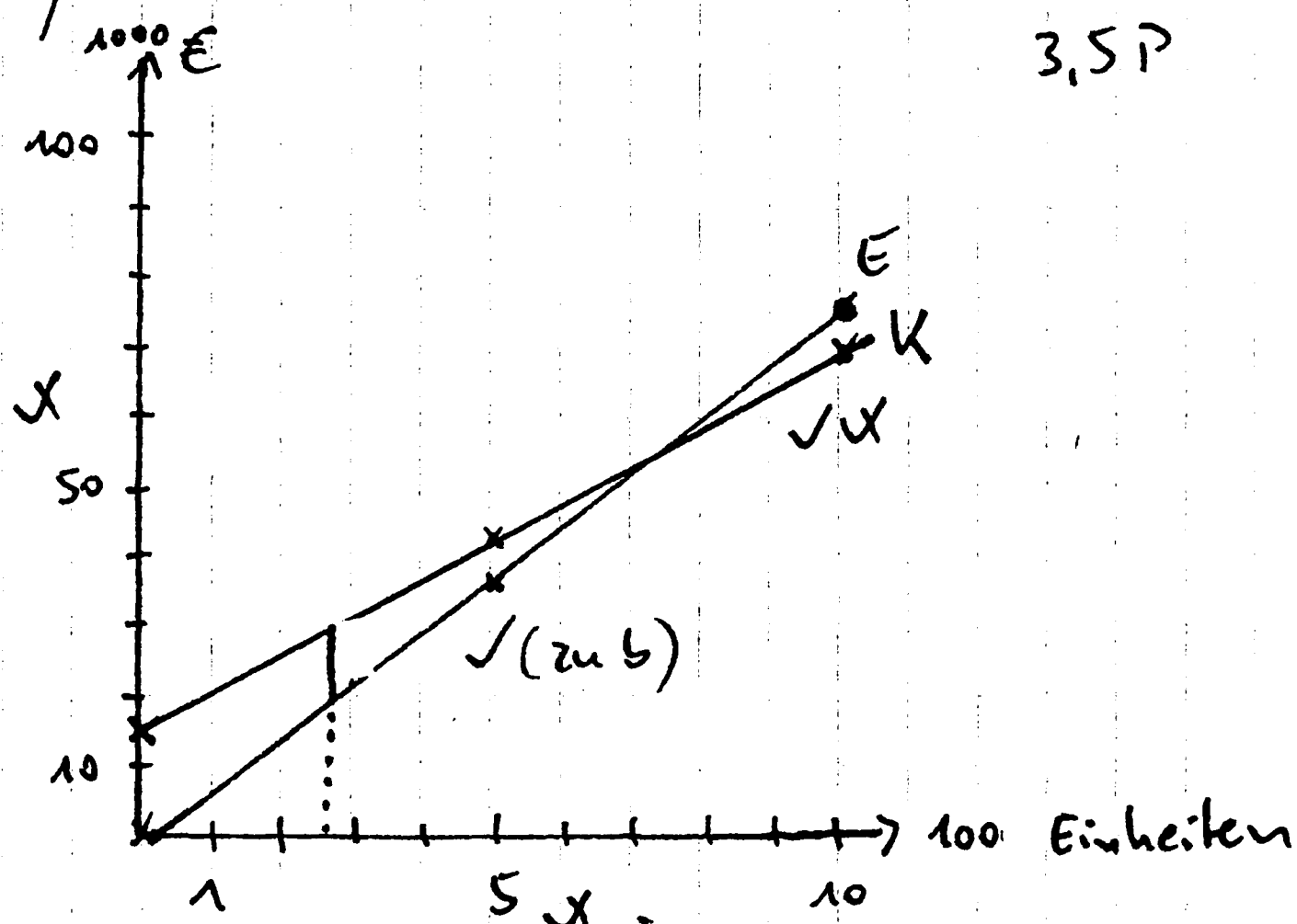
$$u = \sqrt{8} + 2 \cdot \sqrt{20} \approx 11,77 \text{ LE} \checkmark \quad 4P$$

+

$$b) A = 4^2 - \frac{1}{2} \cdot 4 \cdot 2 - \frac{1}{2} \cdot 4 \cdot 2 - \frac{1}{2} \cdot 2 \cdot 2 = 16 - 4 - 4 - 2 = 6 \text{ FE} \checkmark \quad 4P$$

$$4a) K(x) = 55x + 15000 \checkmark$$

3,5P



$$4b) E(x) = 75x \checkmark$$

$$G(x) = 75x - 55x - 15000 \checkmark$$

$$G(x) = 20x - 15000 \checkmark$$

Verlust von 10000 € bei

ca. 250 verkauften Einheiten $\checkmark$

4,5P

$$4c) 20x - 15000 = 0 \checkmark \Rightarrow ab x = 750 \text{ Einheiten} \checkmark$$

2P

$$4d) 0 = m \cdot 500 - 55 \cdot 500 - 15000 \checkmark$$

$$42500 = 500m$$

$$m = 85 \text{ €} \checkmark$$

3P

$$5) a^2 = h^2 + p^2$$

$$a^2 = c \cdot p$$

$$b^2 = c^2 - a^2$$

$$a^2 = 4^2 + 3^2$$

$$5^2 = c \cdot 3$$

$$b^2 = \left(\frac{25}{3}\right) - 5^2 \checkmark$$

$$\Rightarrow a = 5 \text{ cm} \checkmark \Rightarrow c = \frac{25}{3} \approx 8,33 \text{ cm} \checkmark \Rightarrow b = 6\frac{2}{3} \text{ cm} \checkmark$$

6P

44P