

Teil II Musterlos 1. SA - Mathe M. M.

1.1) $2x - 2(x+1) = 2x - 2x - 2 = -2$ ✓

(2 BE)

1.2) $2(3-2x) - (2x+3)(y+2) = 6 - 4x - (2xy + 4x + 3y + 6) =$
 $6 - 4x - 2xy - 4x - 3y - 6 =$
 $-2xy - 8x - 3y$ ✓

(3 BE)

2.1) $\frac{x+2}{2} - \frac{x+2}{3} = \frac{3x+6-2x-4}{6} = \frac{x+2}{6}$ ✓

(2 BE)

2.2) $\frac{2(2b^3)^2}{6a} : \frac{4b^5}{3a^2} = \frac{4b^6}{3a} : \frac{4b^5}{3a^2} = ab$ ✓

(3 BE)

3.1) $(3a + 2b)^2 = 9a^2 + 12ab + 4b^2$ ✓

(2 BE)

3.2) $(\frac{1}{2}x - y)^2 = \frac{1}{4}x^2 - xy + y^2$ ✓

(2 BE)

4.1) $\sqrt{2x(18x-3)+6x} = \sqrt{36x^2 - 6x + 6x} = 6x$ ✓

(2 BE)

4.2) $\sqrt{24} = \sqrt{4 \cdot 6} = 2\sqrt{6}$ ✓

(2 BE)

5.1) $\sqrt{5} \approx 2,3$

(1 BE)

5.2) $\sqrt{17} \approx 4,3$

(1 BE)

6.1) $A = \{1; 2; 3; 4; 5; 6; 7\}$ ✓

(2 BE)

$C = \{3; 5; 7\}$ ✓

6.2) $A \cap B = \{5; 6\}$ ✓

$A \cup C = \{1; 2; 3; 4; 5; 6; 7\} = A$ ✓

$A \cap B \cap C = \{5\}$ ✓

(4 BE)

$(A \cap B) \setminus C = \{6\}$ ✓

7) $\frac{4}{7} < x < \frac{5}{7}$

$\frac{12}{21} < x < \frac{15}{21}$

$\Rightarrow x_1 = \frac{13}{21}, x_2 = \frac{14}{21}$ ✓

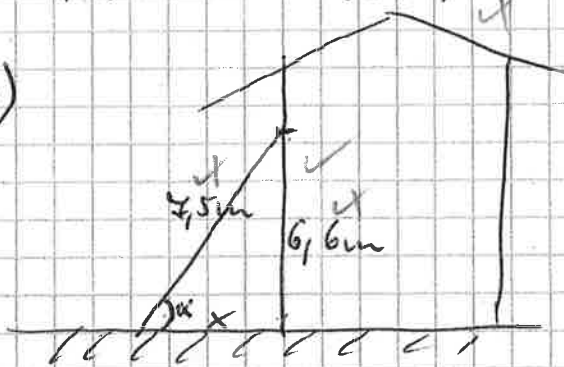
(2 BE)

Teil I:

1.) $T(-2) = -(-2)^2 - 5(-2-1)^2 = -4 - 45 = -49 \checkmark$
 $T(3) = -3^2 - 5(3-1)^2 = -9 - 20 = -29 \checkmark$

(3 BE)

2.1)



(2 BE)

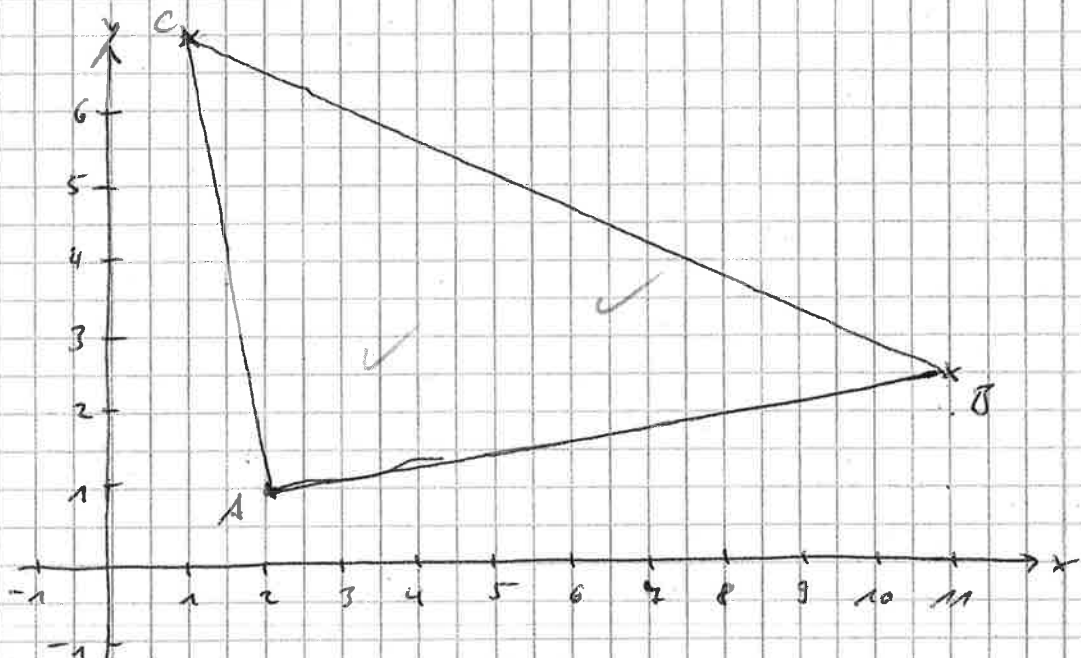
2.2) $x = \sqrt{7,5^2 - 6,6^2} = 3,56 \text{ m} \checkmark$

(2 BE)

2.3) $\sin \alpha = \frac{6,6}{7,5} \checkmark$
 $\alpha = \sin^{-1} \frac{6,6}{7,5} \checkmark$
 $\alpha \approx 61,6^\circ \checkmark$

(2 BE)

3.1)



(2 BE)

3.2) $\overline{AB}^2 = (11-2)^2 + (2-1)^2 = 83,25 \checkmark$

$\overline{AC}^2 = (2-1)^2 + (7-1)^2 = 37 \checkmark$

$\overline{BC}^2 = (11-1)^2 + (7-2,5)^2 = 120,25 \checkmark$

(6 BE)

$\overline{BC}^2 \stackrel{?}{=} \overline{AB}^2 + \overline{AC}^2$

$120,25 = 83,25 + 37 \checkmark$

$120,25 = 120,25 \checkmark \text{ w.A.} \Rightarrow \text{Dreieck ist rechtwinklig}$