

Lösung

$$1.1. \quad 2(x^2 + 2x - x - 2) - 2x + 4 = 2x^2 + 2x - 4 - 2x + 4 = 2x^2 \quad (4)$$

$$2.0. \quad \frac{25a^6}{6b^2} \cdot \frac{18b}{15a^3} = \frac{5a^3}{b} \quad (3)$$

$$3.1. \quad (3x + 5y)^2 = 9x^2 + 30xy + 25y^2$$

$$3.2. \quad (2^x - a)^2 = 4^x - 4a + a^2$$

$$3.3. \quad 81k^2 - 36 = (9k + 6)(9k - 6) \quad (5)$$

$$4.0. \quad T(0) = 0 - (4 - 0)^2 - 0 = -16$$

$$T(-1) = -(-1)^2 - (4 - (-1))^2 - (-1)(-1 - 1) = -1 - 25 - 2 = -28 \quad (5)$$

$$5.1. \quad 12x^2 + 6x + 24x + 12 = 12x^2 + 42x + 12$$

$$30x = 30$$

$$x = 1 \quad L = \{1\} \quad (4)$$

$$5.2. \quad \frac{1}{4}x^2 - 2x + 4 - 4x - 6 = \frac{x^2}{4} - 6x - 2$$

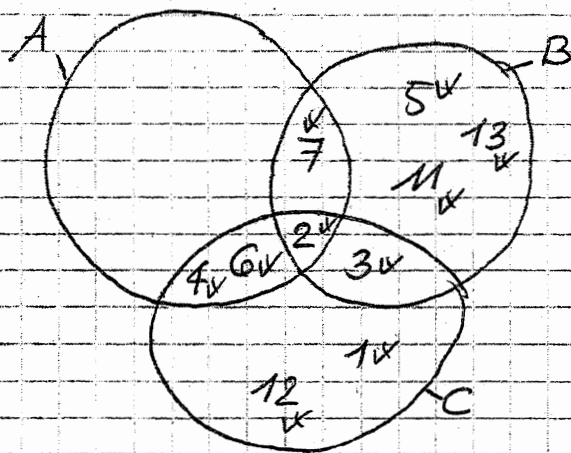
$$-6x - 2 = 0$$

$$-6x = 2$$

$$x = -\frac{1}{3}$$

$$L = \{-\frac{1}{3}\} \quad (5)$$

6.1.



$$A = \{2, 4, 6, 7\}$$

$$B = \{2, 3, 5, 7, 11\}$$

$$C = \{1, 2, 3, 4, 6, 12\}$$

⑤

6.2

$$A \cap B \cap C = \{2\} \checkmark$$

$$A \setminus C = \{7\} \checkmark$$

③ $A \setminus (B \cup C) = \{7\} \checkmark$

③ 7.1 $A_{\text{gran}} = \frac{2+5}{2} \cdot 3 + \frac{7+9}{2} \cdot 2 = 10,5 + 16 = 26,5 \checkmark$

7.2 $A_{\Delta} = \frac{1}{2} \cdot 9 \cdot 9 = 40,5 \checkmark$

② $\text{Anteil} = \frac{26,5}{40,5} = 0,6543 = 65,43\% \checkmark$

7.3 $A_{\text{gran}}(x) = \frac{x+3+x}{2} \cdot 3 + \frac{2x+3+2x+5}{2} \cdot 2 \checkmark$

$$= (2x+3) \frac{3}{2} + 4x+8 \checkmark$$

$$= 3x + \frac{9}{2} + 4x + 8$$

④ $= 7x + 12,5 \checkmark$

$\Sigma 43BE$