

S. 22

①

Aufgabe 1

$$10_i^- \quad \overset{-4_i^-}{\curvearrowright} \quad 6_i^- \quad \overset{-10_i^-}{\curvearrowright} \quad -4_i^- \quad \overset{+24_i^-}{\curvearrowright} \quad 20_i^- \quad \overset{-22_i^-}{\curvearrowright} \quad -2_i^-$$

Aufgabe 2

a) $-7 - 13 = \underline{\underline{-20}}$ b) $8 - (-3) = 8 + 3 = \underline{\underline{11}}$

c) $5 + (-1) = 5 - 1 = \underline{\underline{4}}$ d) $-7 - (+3) = -7 - 3 = \underline{\underline{-10}}$

e) $-15 + 13 = \underline{\underline{-2}}$ f) $-8 + (-4) = -8 - 4 = \underline{\underline{-12}}$

g) $-5 + (-5) = -5 - 5 = \underline{\underline{-10}}$ h) $7 - (+7) = 7 - 7 = \underline{\underline{0}}$

i) $14 - 15 - (-13) + (-1) - (+2) + (+5) = 14 - 15 + 13 - 1 - 2 + 5 = \underline{\underline{14}}$

j) $-30 + 20 + (-11) - (-7) - (+9) - 3 = -30 + 20 - 11 + 7 - 9 - 3 = \underline{\underline{-26}}$

Aufgabe 3

+	-7	1	-2	5
5	-2	6	3	10
-6	-13	-5	-8	-1
10	3	11	8	15

z.B.: 5-3

-	3	-7	-10	8
-3	-6	4	7	-11
5	2	12	15	-3
-6	-9	1	4	-14

oder alle Vorzeichen anders

z.B.: $3 - 5 = -2$

Aufgabe 4

a) $5a - (+12a) = 5a - 12a = \underline{\underline{-7a}}$

b) $-5b - (-5b) = -5b + 5b = \underline{\underline{0}}$

c) $+(-5x) + (-2x) = -5x - 2x = \underline{\underline{-7x}}$

d) $+(-5a) - 3a = -5a - 3a = \underline{\underline{-8a}}$

e) $6b + (+12b) = 6b + 12b = \underline{\underline{18b}}$

f) $-7b + (-12b) = -7b - 12b = \underline{\underline{-19b}}$

g) $5x + (-5x) = 5x - 5x = \underline{\underline{0}}$

h) $+(-5c) - (-c) = -5c + 1c = \underline{\underline{-4c}}$

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Aufgabe 5

$$\begin{aligned} \text{a) } 2a - (-12b) - 9a + (-3b) - (5a) &= 2a + 12b - 9a - 3b - 5a \\ &= \underline{\underline{-12a + 9b}} \end{aligned}$$

$$\text{b) } -5x - (-2y) + (-3x) - (15y) = -5x + 2y - 3x - 15y = \underline{\underline{-8x - 13y}}$$

$$\text{c) } (-8m) + (-7n) - (-7n) - (-8m) = -8m - 7n + 7n + 8m = \underline{\underline{0}}$$

$$\text{d) } (-7p) - (-12q) + (-8p) + (-q) = -7p + 12q - 8p - q = \underline{\underline{-15p + 11q}}$$

$$\begin{aligned} \text{e) } 5x + (-6y) - 3z - (-5x) - (-7y) + (-5z) - (+5z) \\ = 5x - 6y - 3z + 5x + 7y - 5z - 5z = \underline{\underline{10x + y - 13z}} \end{aligned}$$

$$\begin{aligned} \text{f) } -2a + (-3b) - (+9c) + (-3a) - (-5b) + (+c) \\ = -2a - 3b - 9c - 3a + 5b + c = \underline{\underline{-5a + 2b - 8c}} \end{aligned}$$

Aufgabe 6

$$\begin{aligned} \text{a) } -3x - (+2y) - 9x + (-3x) - (7y) - (-6y) \\ = -3x - 2y - 9x - 3x - 7y + 6y = \underline{\underline{-15x - 3y}} \end{aligned}$$

$$\begin{aligned} \text{b) } 3a + (-3b) - (-3a) - (+5b) + (+a) \\ = 3a - 3b + 3a - 5b + a = \underline{\underline{7a - 8b}} \end{aligned}$$

$$\begin{aligned} \text{c) } a - (-3b) - (+5c) - (+5a) + (-b) - (-3c) \\ = a + 3b - 5c - 5a - b + 3c = \underline{\underline{-4a + 2b - 2c}} \end{aligned}$$