

Lösung

Aufgabe 1:

a) $-x - x - x - x = (-1 - 1 - 1 - 1) \cdot x = -4x$ b) $-x - x - x - x - x - x = (-1 - 1 - 1 - 1 - 1 - 1) \cdot x = -6x$
 c) $-x - x = (-1 - 1) \cdot x = -2x$ d) $-x - x - x - x - x - x - x = (-1 - 1 - 1 - 1 - 1 - 1 - 1) \cdot x = -7x$

2- a) $-y - y - y = -3y$ b) $-a - a - a - a = -4a$ c) $-k - k = -2k$ d) $-z - z - z - z - z = -5z$ e) $-r - r - r = -3r$
 f) $-m - m - m - m - m - m = -6m$ g) $-l - l - l - l - l = -5l$ h) $-s - s - s - s - s - s - s = -8s$

3)		$-3y$	$-4a$	$-2k$	$-5z$	$-3r$	$-6m$	$-5l$	$-8s$
Natürliche Zahl	3	$(-3) \cdot 3 = -9$	$(-4) \cdot 3 = -12$	$(-2) \cdot 3 = -6$	$(-5) \cdot 3 = -15$	$(-3) \cdot 3 = -9$	$(-6) \cdot 3 = -18$	$(-5) \cdot 3 = -15$	$(-8) \cdot 3 = -24$
Negative Zahl	-2	$(-3) \cdot (-2) = 6$	$(-4) \cdot (-2) = 8$	$(-2) \cdot (-2) = 4$	$(-5) \cdot (-2) = -10$	$(-3) \cdot (-2) = 6$	$(-6) \cdot (-2) = 12$	$(-5) \cdot (-2) = 10$	$(-8) \cdot (-2) = 16$
Bruchzahl	$\frac{1}{3}$	$-3 \cdot \frac{1}{3} = -1$	$-4 \cdot \frac{1}{3} = -\frac{4}{3}$	$-2 \cdot \frac{1}{3} = -\frac{2}{3}$	$-5 \cdot \frac{1}{3} = -\frac{5}{3}$	$-3 \cdot \frac{1}{3} = -1$	$-6 \cdot \frac{1}{3} = -2$	$-5 \cdot \frac{1}{3} = -\frac{5}{3}$	$-8 \cdot \frac{1}{3} = -\frac{8}{3}$

Aufgabe 2: a) $-2m = -m - m$ b) $-5r = -r - r - r - r - r$ c) $-4r = -r - r - r - r$
 d) $-7n = -n - n - n - n - n - n - n$ e) $-8x = -x - x - x - x - x - x - x - x$

		$-2m$	$-5r$	$-4r$	$-7n$	$-8x$
Natürliche Zahl	4	$-2 \cdot 4 = -8$	$-5 \cdot 4 = -20$	$-4 \cdot 4 = -16$	$-7 \cdot 4 = -28$	$-8 \cdot 4 = -32$
Negative Zahl	-1	$-2 \cdot (-1) = 2$	$-5 \cdot (-1) = 5$	$-4 \cdot (-1) = 4$	$-7 \cdot (-1) = 7$	$-8 \cdot (-1) = 8$
Bruchzahl	$\frac{2}{3}$	$-2 \cdot \frac{2}{3} = -\frac{4}{3}$	$-5 \cdot \frac{2}{3} = -\frac{10}{3}$	$-4 \cdot \frac{2}{3} = -\frac{8}{3}$	$-7 \cdot \frac{2}{3} = -\frac{14}{3}$	$-8 \cdot \frac{2}{3} = -\frac{16}{3}$

Aufgabe 4:

a) $-2m - 5m - m = (-2 - 5 - 1) \cdot m = -8m$ b) $-\frac{1}{3}x - \frac{2}{3}x = x \cdot \left(-\frac{1}{3} - \frac{2}{3}\right) = -x \cdot \frac{3}{3} = -x$
 c) $-r - 2r = (-1 - 2) \cdot r = -3r$
 d) $-y - 3 - 5y = (-1 - 5) \cdot y - 3 = -6y - 3$ e) $-8 - 3z - 7z - 3 = (-3 - 7) \cdot z - 8 - 3 = -10z - 11$
 f) $-7 - 2k - 5k = -7 + (-2 - 5) \cdot k = -7 - 7k$

		$-8m$	$-x$	$-3r$	$-6y - 3$	$-10z - 11$	$-7k - 7$
Natürliche Zahl	5	$-8 \cdot 5 = -40$	-5	$-3 \cdot 5 = -15$	$-6 \cdot 5 - 3 = -33$	$-10 \cdot 5 - 11 = -61$	$-7 \cdot 5 - 7 = -42$
Negative Zahl	-3	$-8 \cdot (-3) = 24$	3	$-3 \cdot (-3) = 9$	$-6 \cdot (-3) - 3 = 18 - 3 = 15$	$-10 \cdot (-3) - 11 = 30 - 11 = 19$	$-7 \cdot (-3) - 7 = 21 - 7 = 14$
Bruchzahl	$\frac{3}{5}$	$-8 \cdot \frac{3}{5} = -\frac{24}{5}$	$\frac{3}{5}$	$-3 \cdot \frac{3}{5} = -\frac{9}{5}$	$-6 \cdot \frac{3}{5} - 3 = -\frac{18}{5} - 3 = -\frac{18 - 15}{5} = -\frac{33}{5}$	$-10 \cdot \frac{3}{5} - 11 = -\frac{30}{5} - 11 = \frac{-30 - 55}{5} = -\frac{85}{5} = -17$	$-7 \cdot \frac{3}{5} - 7 = -\frac{21}{5} - 7 = \frac{-21 - 35}{5} = -\frac{56}{5} = -10\frac{1}{5}$