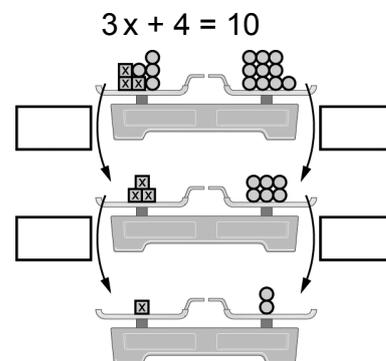
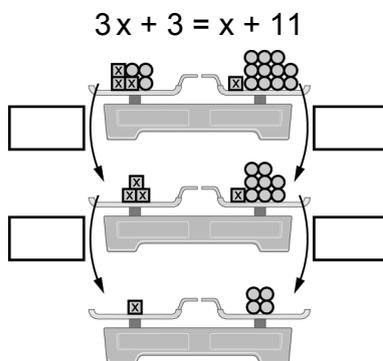
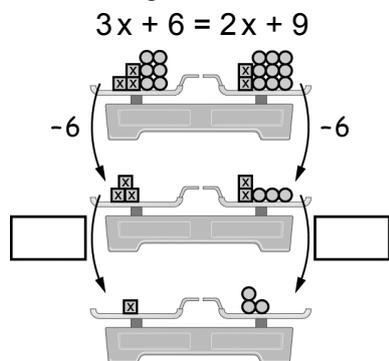


Gleichungen durch Umformen lösen

1 Die Gleichungen werden durch Waagen dargestellt. Schreibe die Umformungsschritte und die Lösungen auf.



2 Ergänze.

a)

$\square \left(\begin{array}{c} 5 + x = 12 \\ x = \end{array} \right) \square$

b)

$\square \left(\begin{array}{c} x - 3 = 5 \\ \end{array} \right) \square$

c)

$\square \left(\begin{array}{c} 9x = 45 \\ \end{array} \right) \square$

d)

$\square \left(\begin{array}{c} x : 2 = 3 \\ \end{array} \right) \square$

e)

$\square \left(\begin{array}{c} 5x - 26 = 19 \\ \end{array} \right) \square$
 $\square \left(\begin{array}{c} \text{---} \\ \end{array} \right) \square$

f)

$\square \left(\begin{array}{c} 8 + 4x = 24 \\ \end{array} \right) \square$
 $\square \left(\begin{array}{c} \text{---} \\ \end{array} \right) \square$

3 Löse die Gleichung mit Äquivalenzumformungen. Mache die Probe.

a) $x - 13 = 6$ | +13
 $x = 19$

b) $9 + x = 24$ | _____

c) $4x = 48$ | _____

d) $x : 3 = 6$ | _____

e) $x - 5 = 12$ | _____

f) $8x - 10 = 78$ | _____

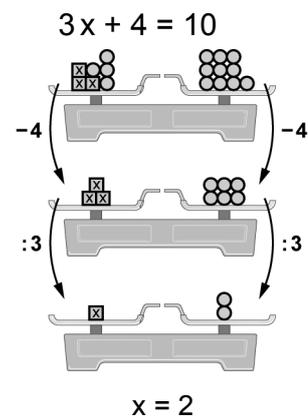
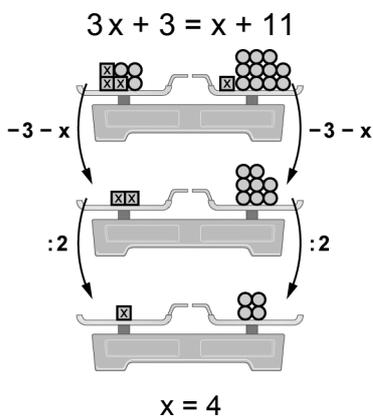
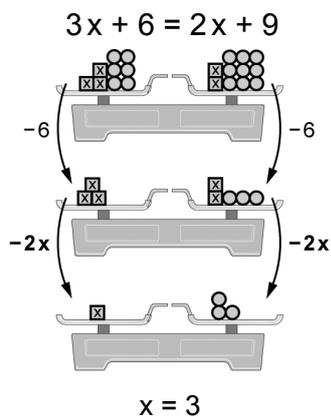
g) $11x = 52 + 7x$ | _____

h) $3x + 14 = 62$ | _____

i) $2x = 42 - x$ | _____

Gleichungen. Ungleichungen | Fördern

Gleichungen durch Umformen lösen – Lösung



2

a)

$$\boxed{-5} \left(\begin{array}{l} 5 + x = 12 \\ x = 7 \end{array} \right) \boxed{-5}$$

b)

$$\boxed{+3} \left(\begin{array}{l} x - 3 = 5 \\ x = 8 \end{array} \right) \boxed{+3}$$

c)

$$\boxed{:9} \left(\begin{array}{l} 9x = 45 \\ x = 5 \end{array} \right) \boxed{:9}$$

d)

$$\boxed{\cdot 2} \left(\begin{array}{l} x : 2 = 3 \\ x = 6 \end{array} \right) \boxed{\cdot 2}$$

e)

$$\begin{array}{l} \boxed{+26} \\ \boxed{:5} \end{array} \left(\begin{array}{l} 5x - 26 = 19 \\ 5x = 45 \\ x = 9 \end{array} \right) \begin{array}{l} \boxed{+26} \\ \boxed{:5} \end{array}$$

f)

$$\begin{array}{l} \boxed{-8} \\ \boxed{:4} \end{array} \left(\begin{array}{l} 8 + 4x = 24 \\ 4x = 16 \\ x = 4 \end{array} \right) \begin{array}{l} \boxed{-8} \\ \boxed{:4} \end{array}$$

3

a) $x - 13 = 6$ $|+13$
 $x = 19$

b) $9 + x = 24$ $| -9$
 $x = 15$

c) $4x = 48$ $| :4$
 $x = 12$

d) $x : 3 = 6$ $| \cdot 3$
 $x = 18$

e) $x - 5 = 12$ $| +5$
 $x = 17$

f) $8x - 10 = 78$ $| +10$
 $8x = 88$ $| :8$
 $x = 11$

g) $11x = 52 + 7x$ $| -7x$
 $4x = 52$ $| :4$
 $x = 13$

h) $3x + 14 = 62$ $| -14$
 $3x = 48$ $| :3$
 $x = 16$

i) $2x = 42 - x$ $| +x$
 $3x = 42$ $| :3$
 $x = 14$