

Gleichungen 2

(Lösung)

1. Vereinfache und löse die Gleichungen.

a) $9c - 84 = 27c - 3$

$$9c - 84 = 27c - 3 \quad | + 3$$

$$9c - 81 = 27c \quad | - 9c$$

$$-81 = 18c \quad | : 18$$

$$-4,5 = c$$

b) $3(x - 3) = 2x - 2$

$$3x - 9 = 2x - 2 \quad | + 2$$

$$3x - 7 = 2x \quad | - 3x$$

$$-7 = -x \quad | \cdot (-1)$$

$$7 = x$$

c) $4(3x + 1) = 5x + 18$

$$12x + 4 = 5x + 18 \quad | - 4$$

$$12x = 5x + 14 \quad | - 5x$$

$$7x = 14 \quad | : 7$$

$$x = 2$$

d) $-6x - 5 = 14,2$

$$-6x - 5 = 14,2 \quad | + 5$$

$$-6x = 19,2 \quad | : (-6)$$

$$-6x = 19,2 \quad | : (-6)$$

$$x = -3,2$$

e) $(x - 4)^2 = x^2 + 18$

$$x^2 - 8x + 16 = x^2 + 18 \quad | - 16$$

$$x^2 - 8x = x^2 + 2 \quad | - x^2$$

$$-8x = 2 \quad | : (-8)$$

$$x = -\frac{1}{4}$$

f) $\frac{-4x - 5}{5} = \frac{20 - 4x}{4}$

$$\frac{-4x - 5}{5} = \frac{20 - 4x}{4} \quad | \cdot 5$$

$$-4x - 5 = \frac{5(20 - 4x)}{4} \quad | \cdot 4$$

$$4(-4x - 5) = 5(20 - 4x)$$

$$-16x - 20 = 100 - 20x \quad | + 20$$

$$-16x = 120 - 20x \quad | + 20x$$

$$4x = 120 \quad | : 4$$

$$x = 30$$