

Gleichungen lösen

Aufgabe 1:

Löse die Gleichung und gib die Lösungsmenge an.

1) $-1(x + 3) + 6 = -2 - 2x$

Lösung

$$\begin{aligned} 1) \quad -1(x + 3) + 6 &= -2 - 2x \quad |T \\ -1x + 3 &= -2 - 2x \quad |+2x \\ x + 3 &= -2 \quad |-3 \\ x &= -5 \end{aligned}$$

$$L = \{-5\}$$

2) $-1x + 1 = -7 - 3x$

$$\begin{aligned} 2) \quad -1x + 1 &= -7 - 3x \quad |+3x \\ 2x + 1 &= -7 \quad |-1 \\ 2x &= -8 \quad |:2 \\ x &= -4 \end{aligned}$$

$$L = \{-4\}$$

3) $5(x + 4) = 13x + 3 - 8x$

$$\begin{aligned} 2) \quad 5(x + 4) &= 13x + 3 - 8x \quad |T \\ 5(x + 4) &= 5x + 3 \quad |T \\ 5x + 20 &= 5x + 3 \quad |-5x \\ 20 &= 3 \end{aligned}$$

$$L = \{\}$$

4) $4x - 2 = 2 + 3x$

$$\begin{aligned} 2) \quad 4x - 2 &= 2 + 3x \quad |-3x \\ 1x - 2 &= 2 \quad |+2 \\ 1x &= 4 \quad |:1 \\ x &= 4 \end{aligned}$$

$$L = \{4\}$$

5) $5(x + 1) = 8x + 5 - 3x$

$$\begin{aligned} 2) \quad 5(x + 1) &= 8x + 5 - 3x \quad |T \\ 5x + 5 &= 5x + 5 \quad |-5 \\ 5x &= 5x \quad |:5 \\ x &= x \end{aligned}$$

$$L = R$$

6) $8x + 4 = 8 + 4x$

$$\begin{aligned} 2) \quad 8x + 4 &= 8 + 4x \quad |-4x \\ 4x + 4 &= 8 \quad |-4 \\ 4x &= 4 \quad |:4 \\ x &= 1 \end{aligned}$$

$$L = \{1\}$$

7) $-8x - 5 = -8 - 5x$

$$\begin{aligned} 2) \quad -8x - 5 &= -8 - 5x \quad |+5x \\ -3x - 5 &= -8 \quad |+5 \\ -3x &= -3 \quad |:(-3) \\ x &= 1 \end{aligned}$$

$$L = \{1\}$$