

Lösungen der Aufgaben

- a) $-0,3 + 2,7x = -5,7$ $|+0,3$
 $2,7x = -5,4$ $|:(2,7)$
 $x = -2$ $L = \{-2\}$
- b) $-6x + \frac{3}{8} = -0,125$ $|-\frac{3}{8}$
 $-6x = -\frac{4}{8}$ $|:(-6)$
 $x = \frac{1}{12}$ $L = \left\{\frac{1}{12}\right\}$
- c) $\frac{4}{7} - \frac{5}{7}x - 2 = \frac{3}{14}x - \frac{1}{2}$ $|+\frac{5}{7}x$
 $\frac{4}{7} - \frac{14}{7} = \frac{3}{14}x + \frac{10}{14}x - \frac{1}{2}$ $|+\frac{1}{2}$
 $-\frac{10}{7} + \frac{1}{2} = \frac{13}{14}x$
 $-\frac{20}{14} + \frac{7}{14} = \frac{13}{14}x$ $|:\frac{13}{14}$
 $x = -1$ $L = \{-1\}$
- d) $3x - 7,25 = \frac{1}{4} - 2x$ $|+2x$
 $5x - 7\frac{1}{4} = \frac{1}{4}$ $|+7\frac{1}{4}$
 $5x = 7,5$ $|:5$
 $x = 1,5$ $L = \{1,5\}$
- e) $0,375x - \frac{5}{8}(x+3) = \frac{7}{8} - \frac{1}{2}x$
 $\frac{3}{8}x - \frac{5}{8}x - \frac{15}{8} = \frac{7}{8} - \frac{4}{8}x$ $|+\frac{4}{8}x$
 $\frac{1}{4}x - \frac{15}{8} = \frac{7}{8}$ $|+\frac{15}{8}$
 $\frac{1}{4}x = \frac{22}{8} = \frac{11}{4}$ $|\cdot 4$
 $x = 11$ $L = \{11\}$
- f) $4(x+3) \cdot 25\% = 3x - (x-3)$
 $x+3 = 2x+3$
 $x = 0$ $L = \{0\}$
- g) $5(x+3) \cdot \frac{1}{5} = 3x - (2x-3)$
 $x+3 = x+3$ $L = \mathcal{Q}$
- h) $5(x+3) \cdot \frac{1}{5} = 3x - (2x+3)$
 $x+3 = x-3$ $L = \{ \}$
- i) $\left(x - \frac{1}{2}\right) \cdot (2+x) = (x-2) \cdot (x+3)$
 $2x - 1 + x^2 - \frac{1}{2}x = x^2 - 2x + 3x - 6$ $|-x^2$

07_Lineare Gleichungen_krm

$$\frac{3}{2}x - 1 = x - 6 \quad | -x$$

$$\frac{1}{2}x - 1 = -6 \quad | +1$$

$$\frac{1}{2}x = -5 \quad L = \{-10\}$$

j) $\frac{3}{5}x \cdot \left(\frac{1}{4}x - 1\right) = \frac{3}{20}x^2 + \frac{1}{10}$ *vergleiche auch mit (l), (m)*

$$\frac{3}{20}x^2 - \frac{3}{5}x = \frac{3}{20}x^2 + \frac{1}{10} \quad | -\frac{3}{20}x^2$$

$$-\frac{3}{5}x = \frac{1}{10} \quad | \cdot \left(-\frac{5}{3}\right)$$

$$x = -\frac{1}{6} \quad L = \left\{-\frac{1}{6}\right\}$$

k) $2 + (x+3) \cdot (x-1) = (x-2) \cdot (x+1)$

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

$$2x - 1 = -x - 2 \quad | +x$$

$$3x - 1 = -2 \quad | +1$$

$$3x = -1 \quad | :3$$

$$x = -\frac{1}{3} \quad L = \left\{-\frac{1}{3}\right\}$$

l) $\frac{3}{5}x \cdot \left(\frac{1}{4}x - 1\right) = \frac{3}{20}x^2 - \frac{3}{5}x$ $| \cdot \frac{5}{3}$ *(vgl. auch mit (j))!*

$$x \cdot \left(\frac{1}{4}x - 1\right) = \frac{1}{4}x^2 - x$$

$$\frac{1}{4}x^2 - x = \frac{1}{4}x^2 - x \quad L = \mathcal{Q}$$

m) $\frac{3}{5}x \cdot \left(\frac{1}{4}x - 1\right) = \frac{3}{20}x^2 - \frac{3}{5}x + 1$ $| \cdot \frac{5}{3}$ *(vgl. auch mit (j))!*

$$x \cdot \left(\frac{1}{4}x - 1\right) = \frac{1}{4}x^2 - x + \frac{5}{3}$$

$$\frac{1}{4}x^2 - x = \frac{1}{4}x^2 - x + \frac{5}{3} \quad L = \{ \}$$