

## Lösungen der Aufgaben

$$\begin{array}{ll}
 \text{a)} & -0,3 + 2,7x = -5,7 & | +0,3 \\
 & 2,7x = -5,4 & | : (2,7) \\
 & x = -2 & L = \{-2\}
 \end{array}$$

$$\begin{array}{ll}
 \text{b)} & -6x + \frac{3}{8} = -0,125 & | -\frac{3}{8} \\
 & -6x = -\frac{4}{8} & | : (-6) \\
 & x = \frac{1}{12} & L = \left\{ \frac{1}{12} \right\}
 \end{array}$$

$$\begin{array}{ll}
 \text{c)} & \frac{4}{7} - \frac{5}{7}x - 2 = \frac{3}{14}x - \frac{1}{2} & | +\frac{5}{7}x \\
 & \frac{4}{7} - \frac{14}{7} = \frac{3}{14}x + \frac{10}{14}x - \frac{1}{2} & | +\frac{1}{2} \\
 & -\frac{10}{7} + \frac{1}{2} = \frac{13}{14}x & \\
 & -\frac{20}{14} + \frac{7}{14} = \frac{13}{14}x & | : \frac{13}{14} \\
 & x = -1 & L = \{-1\}
 \end{array}$$

$$\begin{array}{ll}
 \text{d)} & 3x - 7,25 = \frac{1}{4} - 2x & | +2x \\
 & 5x - 7\frac{1}{4} = \frac{1}{4} & | +7\frac{1}{4} \\
 & 5x = 7,5 & | : 5 \\
 & x = 1,5 & L = \{1,5\}
 \end{array}$$

$$\begin{array}{ll}
 \text{e)} & 0,375x - \frac{5}{8}(x+3) = \frac{7}{8} - \frac{1}{2}x & \\
 & \frac{3}{8}x - \frac{5}{8}x - \frac{15}{8} = \frac{7}{8} - \frac{4}{8}x & | +\frac{4}{8}x \\
 & \frac{1}{4}x - \frac{15}{8} = \frac{7}{8} & | +\frac{15}{8} \\
 & \frac{1}{4}x = \frac{22}{8} = \frac{11}{4} & | \cdot 4 \\
 & x = 11 & L = \{11\}
 \end{array}$$

$$\begin{array}{ll}
 \text{f)} & 4(x+3) \cdot 25\% = 3x - (x-3) & \\
 & x+3 = 2x+3 & \\
 & x = 0 & L = \{0\}
 \end{array}$$

## 07\_Lineare Gleichungen\_krm

- g)  $5(x+3) \cdot \frac{1}{5} = 3x - (2x-3)$   
 $x+3 = x+3$   $L = Q$
- h)  $5(x+3) \cdot \frac{1}{5} = 3x - (2x+3)$   
 $x+3 = x-3$   $L = \{ \}$
- i)  $\left(x - \frac{1}{2}\right) \cdot (2+x) = (x-2) \cdot (x+3)$   
 $2x-1+x^2 - \frac{1}{2}x = x^2 - 2x + 3x - 6$   $|-x^2$   
 $\frac{3}{2}x-1 = x-6$   $|-x$   
 $\frac{1}{2}x-1 = -6$   $|+1$   
 $\frac{1}{2}x = -5$   $L = \{-10\}$
- 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)*  
 $\frac{3}{20}x^2 - \frac{3}{5}x = \frac{3}{20}x^2 + \frac{1}{10}$   $|- \frac{3}{20}x^2$   
 $-\frac{3}{5}x = \frac{1}{10}$   $|\cdot \left(-\frac{5}{3}\right)$   
 $x = -\frac{1}{6}$   $L = \left\{-\frac{1}{6}\right\}$
- k)  $2 + (x+3) \cdot (x-1) = (x-2) \cdot (x+1)$   
 $2+x^2+3x-x-3 = x^2-2x+x-2$   $|-x^2$   
 $2x-1 = -x-2$   $|+x$   
 $3x-1 = -2$   $|+1$   
 $3x = -1$   $|\div 3$   
 $x = -\frac{1}{3}$   $L = \left\{-\frac{1}{3}\right\}$
- 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))!*  
 $x \cdot \left(\frac{1}{4}x-1\right) = \frac{1}{4}x^2 - x$   
 $\frac{1}{4}x^2 - x = \frac{1}{4}x^2 - x$   $L = Q$
- 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))!*  
 $x \cdot \left(\frac{1}{4}x-1\right) = \frac{1}{4}x^2 - x + \frac{5}{3}$   
 $\frac{1}{4}x^2 - x = \frac{1}{4}x^2 - x + \frac{5}{3}$   $L = \{ \}$