

Musterlösungen:

S. 18/1

$$\begin{aligned} \text{a) } 9(3+2x) &= -1 & | :9 & \\ 27+18x &= -1 & | -27 & \\ 18x &= -28 & | :18 & \\ x &= -\frac{14}{9} \end{aligned}$$

$$\mathbb{L} = \left\{ -\frac{14}{9} \right\}$$

$$\begin{aligned} \text{d) } 6 \cdot (y-3) &= 5 \cdot (3-y) \\ 6y-18 &= 15-5y & | +5y & | +18 \\ 11y &= 33 & | :11 & \\ y &= 3 \end{aligned}$$

$$\mathbb{L} = \{ 3 \}$$

$$\begin{aligned} \text{g) } 2 \cdot \left(1 - \frac{1}{2}x \right) - 3 \left(x - \frac{2}{3} \right) &= 0 \\ 2-x-3x+1 &= 0 \\ -4x+3 &= -3 & | -3 & \\ -4x &= -6 & | :(-4) & \\ x &= \frac{3}{2} \end{aligned}$$

$$\mathbb{L} = \left\{ \frac{3}{2} \right\}$$

$$\begin{aligned} \text{h) } 0,5 + (2-x) &= 1 - (1+x) \\ 0,5 + 2 - x &= 1 - 1 - x & | +x & \\ 2,5 - x &= -x & | +x & \\ 2,5 &= 0 \end{aligned}$$

Widerspruch! \Rightarrow keine Lösung möglich!
 $\mathbb{L} = \{ \}$

$$\begin{aligned} \text{2. a) } 11 - (x+3) &= 3x \\ 11-x-3 &= 3x \\ -x+8 &= 3x & | +x & \\ 8 &= 4x & | :4 & \\ 2 &= x \end{aligned}$$

$$\mathbb{L} = \{ 2 \}$$

$$\begin{aligned} \text{d) } 7 \cdot (x-3) &= 5x+17 \\ 7x-21 &= 5x+17 & | +21 & | -5x \\ 2x &= 38 & | :2 & \\ x &= 19 \end{aligned}$$

$$\mathbb{L} = \{ 19 \}$$

$$\begin{aligned} \text{3. a) } 0,6 \cdot (4+3z) &= 5 \cdot (0,7+0,2z) + 2,5 \\ 2,4+1,8z &= 3,5+z+2,5 \\ 2,4+1,8z &= 6+z & | -z & | -2,4 \\ 0,8z &= 3,6 & | :0,8 & \\ z &= 4,5 \end{aligned}$$

$$\mathbb{L} = \{ 4,5 \}$$

$$\begin{aligned} \text{c) } 13(4y-11) &= 7+5 \cdot (11y+9) \\ 52y-143 &= 7+55y+45 & | -52y & | -52 \\ -143 &= 52-52y & | -52 & \\ -195 &= -52y & | :(-52) & \\ \frac{15}{4} &= y & \mathbb{L} = \left\{ \frac{15}{4} \right\} \end{aligned}$$

$$\begin{aligned} \text{e) } 14 \cdot (25a+19) &= 34a - (14a-29) + 17 \\ 350a+266 &= 34a-14a+29+17 \\ 350a &= 20a+46 & | -20 & \\ 330a &= 46 & | :330 & \\ a &= \frac{23}{165} \end{aligned}$$

$$\mathbb{L} = \left\{ \frac{23}{165} \right\}$$