

Verbesserung der Hausaufgabe:

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$$\begin{aligned}\frac{12}{x} &= \frac{6}{x-2} && | \cdot x \cdot (x-2) && \mathbb{D} = \mathbb{Q} \setminus \{0; 2\} \\ 12 \cdot (x-2) &= 6 \cdot x \\ 12x - 24 &= 6x && | + 24 - 6x \\ 6x &= 24 && | : 6 \\ x &= 4 \\ 4 \in \mathbb{D}, \text{ also } \mathbb{L} &= \{4\}\end{aligned}$$

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$$\begin{aligned}\frac{4}{x+2} - 2 &= \frac{3}{2+x} && | \cdot (x+2) && \mathbb{D} = \mathbb{Q} \setminus \{-2\} \\ 4 - 2 \cdot (x+2) &= 3 \\ 4 - 2x - 4 &= 3 \\ -2x &= 3 && | : (-2) \\ x &= -1\frac{1}{2} \\ -1\frac{1}{2} \in \mathbb{D}, \text{ also } \mathbb{L} &= \{-1\frac{1}{2}\}\end{aligned}$$

3c)

$$\frac{x+8}{3x+3} + \frac{x+2}{2x+2} = 1$$

$$\frac{x+8}{3 \cdot (x+1)} + \frac{x+2}{2 \cdot (x+1)} = 1 \quad | \cdot 3 \cdot 2 \cdot (x+1) \quad \mathbb{D} = \mathbb{Q} \setminus \{-1\}$$

$$2 \cdot (x+8) + 3 \cdot (x+2) = 6 \cdot (x+1)$$

$$2x + 16 + 3x + 6 = 6x + 6$$

$$5x + 22 = 6x + 6 \quad | -22 - 6x$$

$$-x = -16$$

$$x = 16$$

$$16 \in \mathbb{D}, \text{ also } \mathbb{L} = \{16\}$$

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$$\frac{4}{x-1} + \frac{3x+1}{2-2x} = 0 \quad \mathbb{D} = \mathbb{Q} \setminus \{1\}$$

$$\frac{4}{x-1} + \frac{3x+1}{(-2) \cdot (-1+x)} = 0 \quad | \cdot (-2) \cdot (-1+x)$$

$$4x \cdot (-2) + 3x + 1 = 0$$

$$-5x + 1 = 0 \quad | -1$$

$$-5x = -1 \quad | : (-5)$$

$$x = \frac{1}{5}$$

$$\frac{1}{5} \in \mathbb{D}, \text{ also } \mathbb{L} = \left\{ \frac{1}{5} \right\}$$

