

S 214 Nr. 3

$$\begin{array}{l|l} c) & 10x_1 + 3x_2 - 2x_3 = 3 \quad \cdot 1 \\ & 5x_3 = 10 \end{array}$$

$$\underline{\begin{array}{l|l} & 2x_1 - x_2 - 3x_3 = 1 \quad \cdot (-5) \end{array}}$$

$$\begin{array}{l} 10x_1 + 3x_2 - 2x_3 = 3 \\ 5x_3 = 10 \end{array}$$

$$\underline{8x_2 + 13x_3 = -2}$$

Dreiecksform oder Stufenform erreicht.

$$\underline{x_3 = 2}$$

$$8x_2 + 13 \cdot 2 = -2 \Rightarrow 8x_2 = -2 - 26 = -28 \Rightarrow x_2 = \underline{\underline{-\frac{28}{8} = -\frac{7}{2}}}$$

$$10x_1 + 3 \cdot \left(-\frac{7}{2}\right) - 2 \cdot 2 = 3 \Rightarrow 10x_1 = 3 + 4 + \frac{21}{2} = \frac{35}{2} \Rightarrow x_1 = \underline{\underline{\frac{7}{4}}}$$

$$\underline{\underline{\mathcal{L} = \left\{ \left(\frac{7}{4}; -\frac{7}{2}; 2 \right) \right\}}}$$

S 214 Nr. 4

$$\begin{array}{l|l|l} a) & 2x_1 - 4x_2 + 5x_3 = 3 & \cdot 3 \\ & 3x_1 + 3x_2 + 7x_3 = 13 & \cdot (-2) \end{array}$$

$$\underline{\begin{array}{l|l|l} & 4x_1 - 2x_2 - 3x_3 = -1 & \cdot (-1) \end{array}}$$

$$\begin{array}{l} 2x_1 - 4x_2 + 5x_3 = 3 \\ -18x_2 + 1 \cdot x_3 = -17 \end{array} \quad \begin{array}{l} \cdot 1 \\ \cdot (-3) \end{array}$$

$$\underline{-6x_2 + 13x_3 = 7}$$

$$\begin{array}{l} 2x_1 - 4x_2 + 5x_3 = 3 \\ -18x_2 + x_3 = -17 \\ -38x_3 = -38 \end{array}$$

$$\underline{x_3 = 1}$$

$$-18x_2 + 1 = -17 \Rightarrow -18x_2 = -18 \Rightarrow x_2 = \underline{\underline{1}}$$

$$2x_1 - 4 \cdot 1 + 5 \cdot 1 = 3 \Rightarrow 2x_1 = 3 - 5 + 4 = 2 \Rightarrow x_1 = \underline{\underline{1}}$$

$$\underline{\underline{\mathcal{L} = \{ (1; 1; 1) \}}}$$