

§ 214 Nr. 3

$$\begin{array}{rcl} \text{a)} & x_1 + 2x_2 - 2x_3 = 4 & \\ & x_2 - 2x_3 = -1 & \cdot 4 \\ & 4x_2 + 3x_3 = 7 & \cdot (-1) \end{array}$$

$$\begin{array}{rcl} & x_1 + 2x_2 - 2x_3 = 4 & \\ & x_2 - 2x_3 = -1 & \\ & -11x_3 = -11 & \end{array}$$

$$\underline{x_3 = 1}$$

$$x_2 - 2 \cdot 1 = -1 \Rightarrow \underline{x_2 = -1 + 2 = +1}$$

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

$$\underline{\mathcal{L} = \{(4; 1; 1)\}}$$

$$\begin{array}{rcl} \text{b)} & 2x_1 - 3x_2 - x_3 = 1 & \cdot 2 \\ & 2x_2 + 3x_3 = 1 & \\ & 4x_1 + 2x_2 + 3x_3 = 6 & \cdot (-1) \end{array}$$

$$\begin{array}{rcl} & 2x_1 - 3x_2 - x_3 = 1 & \\ & 2x_2 + 3x_3 = 1 & \cdot 4 \\ & -8x_2 - 5x_3 = -4 & \cdot 1 \end{array}$$

$$\begin{array}{rcl} & 2x_1 - 3x_2 - x_3 = 1 & \\ & 2x_2 + 3x_3 = 1 & \\ & 7x_3 = 0 & \end{array}$$

$$\underline{x_3 = 0}$$

$$2x_2 + 3 \cdot 0 = 1 \Rightarrow \underline{x_2 = \frac{1}{2}}$$

$$2x_1 - 3 \cdot \frac{1}{2} - 0 = 1 \Rightarrow 2x_1 = 1 + \frac{3}{2} = \frac{5}{2} \Rightarrow \underline{x_1 = \frac{5}{4}}$$

$$\underline{\mathcal{L} = \left\{ \left(\frac{5}{4}; \frac{1}{2}; 0 \right) \right\}}$$