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Nr. 4)

a)
$$\left(\begin{array}{ccc|c} -1 & 2 & -3 & 2 \\ 0 & -1 & 2 & 2 \\ 0 & -2 & 4 & 2 \end{array}\right) \begin{array}{l} \\ \\ \cdot 2 \\ \cdot(-1) \end{array}$$

$$\left(\begin{array}{ccc|c} -1 & 2 & -3 & 2 \\ 0 & -1 & 2 & 2 \\ 0 & 0 & 0 & 2 \end{array}\right) \Rightarrow \mathbb{L} = \{\ \}$$ keine Lösung

b)
$$\left(\begin{array}{ccc|c} 1 & 1 & 0 & 1 \\ -1 & -1 & 0 & 2 \\ 2 & 3 & 1 & 2 \end{array}\right) \begin{array}{l} \cdot 1 \\ \cdot 1 \\ \\ \end{array}$$

$$\left(\begin{array}{ccc|c} 1 & 1 & 0 & 1 \\ 0 & 0 & 0 & 3 \\ 2 & 3 & 1 & 2 \end{array}\right) \Rightarrow \mathbb{L} = \{\ \}$$ keine Lösung

c)
$$\left(\begin{array}{ccc|c} 1 & 0 & 1 & 2 \\ 0 & 1 & 1 & 2 \\ 1 & 1 & 0 & 2 \end{array}\right) \begin{array}{l} \cdot 1 \\ \\ \cdot(-1) \end{array}$$

$$\left(\begin{array}{ccc|c} 1 & 0 & 1 & 2 \\ 0 & 1 & 1 & 2 \\ 0 & -1 & 1 & 0 \end{array}\right) \begin{array}{l} \\ \cdot 1 \\ \cdot 1 \end{array}$$

$$\left(\begin{array}{ccc|c} 1 & 0 & 1 & 2 \\ 0 & 1 & 1 & 2 \\ 0 & 0 & 2 & 2 \end{array}\right) \begin{array}{l} \Rightarrow x_1 + 1 = 2 \Rightarrow x_1 = 1 \\ \Rightarrow x_2 + 1 = 2 \Rightarrow x_2 = 1 \\ \Rightarrow x_3 = 1 \end{array}$$

$\mathbb{L} = \{(1\,|\,1\,|\,1)\}$

Nr. 5)

a) $\left.\begin{array}{l} 8 = 5 + 3t \Rightarrow t = 1 \\ 0 = 2 - 2t \Rightarrow t = 1 \\ 1 = \quad t \Rightarrow t = 1 \end{array}\right\} \Rightarrow$ für $t = 1$ ist $(8\,|\,0\,|\,1) \in \mathbb{L}$

b) $\left.\begin{array}{l} 2 = 5 + 3t \Rightarrow t = 1 \\ 4 = 2 - 2t \Rightarrow t = -1 \\ 2 = \quad t \Rightarrow t = 2 \end{array}\right\} \Rightarrow (2\,|\,4\,|\,2) \notin \mathbb{L}$

c) $\left.\begin{array}{l} -1 = 5 + 3t \\ 2 = 2 - 2t \Rightarrow t = 0 \\ -2 = \quad t \Rightarrow t = -2 \end{array}\right\} \Rightarrow (-1\,|\,2\,|\,-2) \notin \mathbb{L}$

d) $\left.\begin{array}{l} 5 = 5 + 3t \Rightarrow t = 0 \\ 2 = 2 - 2t \Rightarrow t = 0 \\ 0 = \quad t \Rightarrow t = 0 \end{array}\right\} \Rightarrow$ für $t = 0$ ist $(5\,|\,2\,|\,0) \in \mathbb{L}$

e) $\left.\begin{array}{l} -4 = 5 + 3t \\ 6 = 2 - 2t \Rightarrow t = -2 \\ -3 = \quad t \Rightarrow t = -3 \end{array}\right\} \Rightarrow (-4\,|\,6\,|\,-3) \notin \mathbb{L}$

$\left.\begin{array}{l} 6{,}5 = 5 + 3t \Rightarrow t = 0{,}5 \\ 1 = 2 - 2t \Rightarrow t = 0{,}5 \\ 0{,}5 = \quad t \Rightarrow t = 0{,}5 \end{array}\right\} \Rightarrow (6{,}5\,|\,1\,|\,0{,}5) \in \mathbb{L}$ für $t = 0{,}5$

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