

S 285 Nr. 7

$$E: 10x_1 + 2x_2 - 11x_3 = 30 \Rightarrow \vec{n} = \begin{pmatrix} 10 \\ 2 \\ -11 \end{pmatrix}; \vec{n}_0 = \frac{1}{15} \begin{pmatrix} 10 \\ 2 \\ -11 \end{pmatrix}$$

$$E_1: 10x_1 + 2x_2 - 11x_3 = k_1$$

$$E_2: 10x_1 + 2x_2 - 11x_3 = k_2$$

$$d(E_{1,2}; E) = \left| \frac{k - 30}{15} \right| = 5 \Rightarrow \frac{k - 30}{15} = \pm 5$$

$$k_1 = +5 \cdot 15 + 30 = 105$$

$$k_2 = -5 \cdot 15 + 30 = -45$$

$$E_1: 10x_1 + 2x_2 - 11x_3 = 105$$

$$E_2: 10x_1 + 2x_2 - 11x_3 = -45$$

$$E_1 \cap x_1\text{-Achse} = \{S_{x_1,1}\} \Rightarrow x_2 = x_3 = 0 \Rightarrow 10x_1 = 105$$

$$S_{x_1,1} (10,5 | 0 | 0)$$

$$E_1 \cap x_2\text{-Achse} = \{S_{x_2,1}\} \Rightarrow x_1 = x_3 = 0 \Rightarrow 2x_2 = 105$$

$$S_{x_2,1} (0 | 52,5 | 0)$$

$$E_1 \cap x_3\text{-Achse} = \{S_{x_3,1}\} \Rightarrow x_1 = x_2 = 0 \Rightarrow -11x_3 = 105$$

$$S_{x_3,1} (0 | 0 | -\frac{105}{11})$$

$$E_2 \cap x_1\text{-Achse} \Rightarrow S_{x_1,2} (-4,5 | 0 | 0)$$

$$E_2 \cap x_2\text{-Achse} \Rightarrow S_{x_2,2} (0 | -22,5 | 0)$$

$$E_2 \cap x_3\text{-Achse} \Rightarrow S_{x_3,2} (0 | 0 | \frac{45}{11})$$