

Nr. 11) $g \cap E = \{S_E\}$

$$\begin{aligned} 0) \quad & 3 \cdot (1+r) - 1(0+2r) + 2(3+r) = 3 \\ & 3+3r - 2r + 6+2r = 3 \\ & \qquad \qquad \qquad 3r = -6 \\ & \qquad \qquad \qquad r = -2 \end{aligned}$$

$$\vec{OS}_E = \begin{pmatrix} 1 \\ 0 \\ 3 \end{pmatrix} - 2 \begin{pmatrix} 1 \\ 2 \\ 1 \end{pmatrix} = \begin{pmatrix} -1 \\ -4 \\ 1 \end{pmatrix} \Rightarrow \underline{S_E(-1|-4|1)}$$

$g \cap F = \{S_F\}$

$$\begin{aligned} 3(1+r) - 1(0+2r) + 2(3+r) &= 9 \\ 3r &= 0 \\ r &= 0 \end{aligned}$$

$$\vec{OS}_F = \begin{pmatrix} 1 \\ 0 \\ 3 \end{pmatrix} + 0 \begin{pmatrix} 1 \\ 2 \\ 1 \end{pmatrix} = \begin{pmatrix} 1 \\ 0 \\ 3 \end{pmatrix} \Rightarrow S_F(1|0|3)$$

Abstand S_E S_F

$$d(S_E; S_F) = \sqrt{(1 - (-1))^2 + (0 - (-4))^2 + (3 - 1)^2} = \underline{\underline{\sqrt{24} = 2 \cdot \sqrt{6}}}$$

b) Die Gerade g schneidet die Ebenen nicht b.
 $\Rightarrow d(S_E; S_F)$ entspricht nicht dem Abstand der beiden Ebenen.