

$$g_1: \vec{x} = \begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix} + k \begin{pmatrix} 3 \\ 4 \\ -5 \end{pmatrix}$$

$$g_2: \vec{x} = \begin{pmatrix} 3 \\ -2 \\ 5 \end{pmatrix} + l \begin{pmatrix} 2 \\ 3 \\ 1 \end{pmatrix}$$

$$\cos \alpha = \frac{\vec{a} \cdot \vec{b}}{|\vec{a}| \cdot |\vec{b}|}$$

$$\begin{pmatrix} 3 \\ 4 \\ -5 \end{pmatrix} \cdot \begin{pmatrix} -2 \\ 3 \\ 1 \end{pmatrix}$$

$$\alpha = \cos^{-1} \frac{1}{\sqrt{3^2 + 4^2 + (-5)^2} \cdot \sqrt{(-2)^2 + 3^2 + 1^2}} = \cos^{-1} \frac{1}{\sqrt{50} \cdot \sqrt{14}} = 87,8339$$

$$E: \vec{x} = \begin{pmatrix} 5 \\ 2 \\ 8 \end{pmatrix} + r \begin{pmatrix} 1 \\ 0 \\ 5 \end{pmatrix} + s \begin{pmatrix} 1 \\ 1 \\ 2 \end{pmatrix}$$

$$g: \vec{x} = \begin{pmatrix} 2 \\ 6 \\ -1 \end{pmatrix} + k \begin{pmatrix} 5 \\ 3 \\ 2 \end{pmatrix}$$

$$P = E \cap g$$

$$\begin{pmatrix} 5 \\ 2 \\ 8 \end{pmatrix} + r \begin{pmatrix} 1 \\ 0 \\ 5 \end{pmatrix} + s \begin{pmatrix} 1 \\ 1 \\ 2 \end{pmatrix} = \begin{pmatrix} 2 \\ 6 \\ -1 \end{pmatrix} + k \begin{pmatrix} 5 \\ 3 \\ 2 \end{pmatrix}$$

$$k \begin{pmatrix} 5 \\ 3 \\ 2 \end{pmatrix} + r \begin{pmatrix} 1 \\ 0 \\ 5 \end{pmatrix} + s \begin{pmatrix} 1 \\ -1 \\ 2 \end{pmatrix} = \begin{pmatrix} 2 \\ 6 \\ -1 \end{pmatrix} - \begin{pmatrix} 5 \\ 3 \\ 2 \end{pmatrix}$$

$$\begin{array}{ccc|c} k & r & s & \\ \hline 5 & 1 & 1 & -3 \\ -3 & 0 & -1 & 8 \\ -2 & 5 & 2 & -9 \end{array} \quad | \cdot 2$$

$$\begin{array}{ccc|c} 10 & 2 & 2 & -6 \\ -6 & 0 & -2 & 16 \\ -2 & 5 & 2 & -9 \end{array} \quad | +$$

$$\begin{array}{ccc|c} 10 & 2 & 2 & -6 \\ 4 & 2 & 0 & 10 \\ -8 & 5 & 0 & 7 \end{array}$$

$$g_1 \begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix} + k \begin{pmatrix} 3 \\ 4 \\ -5 \end{pmatrix}$$

$$g_2 \begin{pmatrix} 3 \\ 4 \\ -6 \end{pmatrix} + l \begin{pmatrix} -6 \\ -8 \\ 10 \end{pmatrix}$$

① R V-Kollinear ???

$$\begin{pmatrix} 3 \\ 4 \\ -5 \end{pmatrix} = s \begin{pmatrix} -8 \\ 10 \end{pmatrix}$$

$$s_x = s_y = s_z = -0,5$$

→ wenn ja, dann identisch vs echt parallel

$$\begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix} + k \begin{pmatrix} 3 \\ 4 \\ -5 \end{pmatrix} = \begin{pmatrix} 3 \\ 4 \\ -6 \end{pmatrix}$$

$$k \begin{pmatrix} 3 \\ 4 \\ -5 \end{pmatrix} = \begin{pmatrix} 2 \\ 2 \\ -9 \end{pmatrix}$$

$$k_x \neq k_y \neq k_z$$