

Aufgabe:

Berechne die Spurpunkte:

$$g: \vec{x} = \begin{pmatrix} 1 \\ 1 \\ 0 \end{pmatrix} + s \cdot \begin{pmatrix} 3 \\ -1 \\ 2 \end{pmatrix}$$

$S_{xy}(x|y|0)$:

$$\begin{pmatrix} x \\ y \\ 0 \end{pmatrix} = \begin{pmatrix} 1 \\ 1 \\ 0 \end{pmatrix} + s \cdot \begin{pmatrix} 3 \\ -1 \\ 2 \end{pmatrix}$$

$$\text{I } x = 1 + 3s$$

$$\text{II } y = 1 - s$$

$$\text{III } 0 = 2s \quad | :2 \rightarrow s = 0$$

$$\begin{array}{l} \text{sin I } x = 1 + 3 \cdot 0 = 1 \rightarrow x = 1 \\ \text{sin II } y = 1 - 0 = 1 \rightarrow y = 1 \end{array} \left. \vphantom{\begin{array}{l} \text{sin I } \\ \text{sin II } \end{array}} \right\} S_{xy}(1|1|0)$$

$S_{yz}(0|y|z)$:

$$\begin{pmatrix} 0 \\ y \\ z \end{pmatrix} = \begin{pmatrix} 1 \\ 1 \\ 0 \end{pmatrix} + s \cdot \begin{pmatrix} 3 \\ -1 \\ 2 \end{pmatrix}$$

$$\text{I } 0 = 1 + 3s \quad | -1 \rightarrow -1 = 3s \quad | :3 \rightarrow s = -\frac{1}{3}$$

$$\text{II } y = 1 - s$$

$$\text{III } z = 2s$$

$$\begin{array}{l} \text{sin II } y = 1 - (-\frac{1}{3}) = 1 + \frac{1}{3} = \frac{3}{3} + \frac{1}{3} = \frac{4}{3} \rightarrow y = \frac{4}{3} \\ \text{sin III } z = 2 \cdot (-\frac{1}{3}) = -\frac{2}{3} \rightarrow z = -\frac{2}{3} \end{array} \left. \vphantom{\begin{array}{l} \text{sin II } \\ \text{sin III } \end{array}} \right\} S_{yz}(0|\frac{4}{3}|-\frac{2}{3})$$

Aufgabe:

Berechne die Spurpunkte:

$$g: \vec{x} = \begin{pmatrix} 1 \\ 1 \\ 0 \end{pmatrix} + s \cdot \begin{pmatrix} 3 \\ -1 \\ 2 \end{pmatrix}$$

$S_{xz}(x|0|y)$:

$$\begin{pmatrix} x \\ 0 \\ y \end{pmatrix} = \begin{pmatrix} 1 \\ 1 \\ 0 \end{pmatrix} + s \cdot \begin{pmatrix} 3 \\ -1 \\ 2 \end{pmatrix}$$

$$\text{I } x = 1 + 3s$$

$$\text{II } 0 = 1 - s \quad | +s \rightarrow s = 1$$

$$\text{III } z = 2s$$

$$\begin{array}{l} \text{sin I } x = 1 + 3 \cdot 1 = 1 + 3 = 4 \rightarrow x = 4 \\ \text{sin III } z = 2 \cdot 1 = 2 \rightarrow z = 2 \end{array} \left. \vphantom{\begin{array}{l} \text{sin I } x = 1 + 3 \cdot 1 = 1 + 3 = 4 \rightarrow x = 4 \\ \text{sin III } z = 2 \cdot 1 = 2 \rightarrow z = 2 \end{array}} \right\} S_{xz}(4|0|2)$$