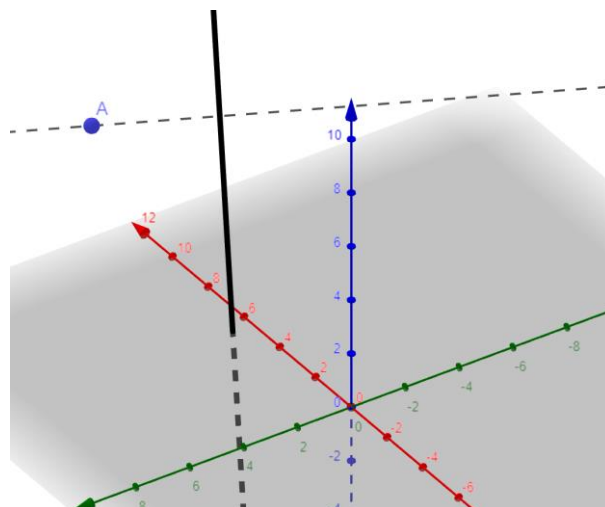


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## Opgave 503

$$P_0(10, 3, 6)$$

$$a: \begin{pmatrix} x \\ y \\ z \end{pmatrix} = \begin{pmatrix} 3 + 2t \\ 2 - 1t \\ -5 + 4t \end{pmatrix}$$



$P(3, 2, -5)$  Finder linjens start punkt ud fra parameterfremstillingen

$\vec{r} = \begin{pmatrix} 2 \\ -1 \\ 4 \end{pmatrix}$  Finder linjens retnings vektor ud fra parameter fremstillingen

$$\overrightarrow{PP_0} = P_0 - P$$

$$\overrightarrow{PP_0} = \begin{pmatrix} 10 \\ 3 \\ 6 \end{pmatrix} - \begin{pmatrix} 3 \\ 2 \\ -5 \end{pmatrix}$$

$$\overrightarrow{PP_0} = \begin{pmatrix} 7 \\ 1 \\ 11 \end{pmatrix}$$

$$\vec{V} = \vec{r} \times \overrightarrow{PP_0}$$

$$\vec{V} = \begin{pmatrix} 2 \\ -1 \\ 4 \end{pmatrix} \times \begin{pmatrix} 7 \\ 1 \\ 11 \end{pmatrix}$$

$$\vec{V} = \begin{pmatrix} -15 \\ 6 \\ 9 \end{pmatrix}$$

$$|\vec{v}| = \sqrt{x^2 + y^2 + z^2}$$

$$|\vec{r}| = \sqrt{2^2 + (-1)^2 + 4^2}$$

$$|\vec{r}| = 4,582576$$

$$|\vec{V}| = \sqrt{(-15)^2 + 6^2 + 9^2}$$

$$|\vec{V}| = 18,49324$$

$$e = \frac{|\vec{V}|}{|\vec{r}|}$$

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$$e = \frac{18.49}{4.58}$$

$$e = 4,037118$$