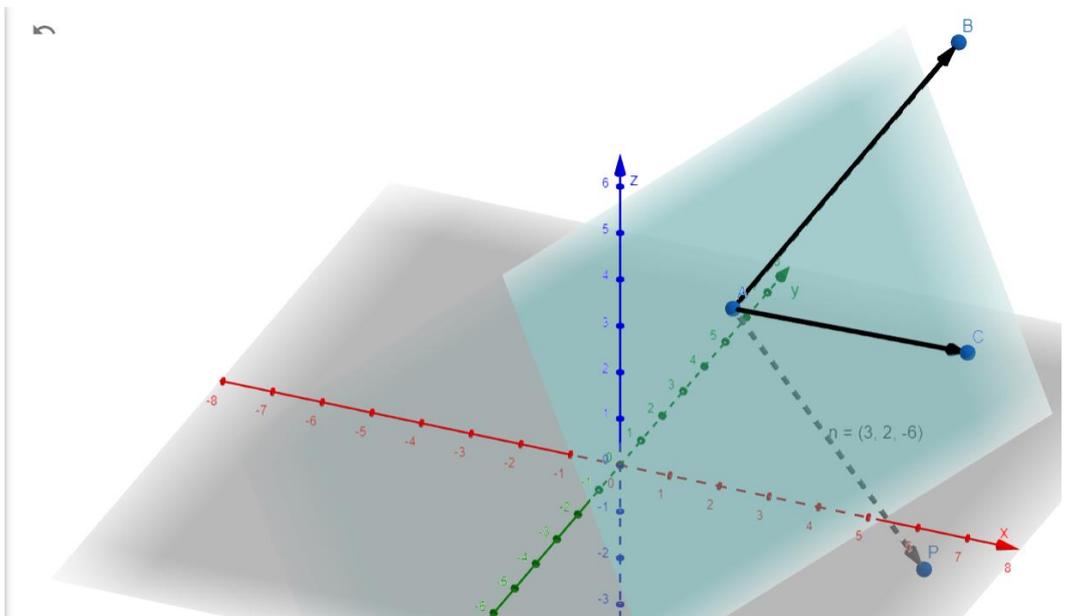
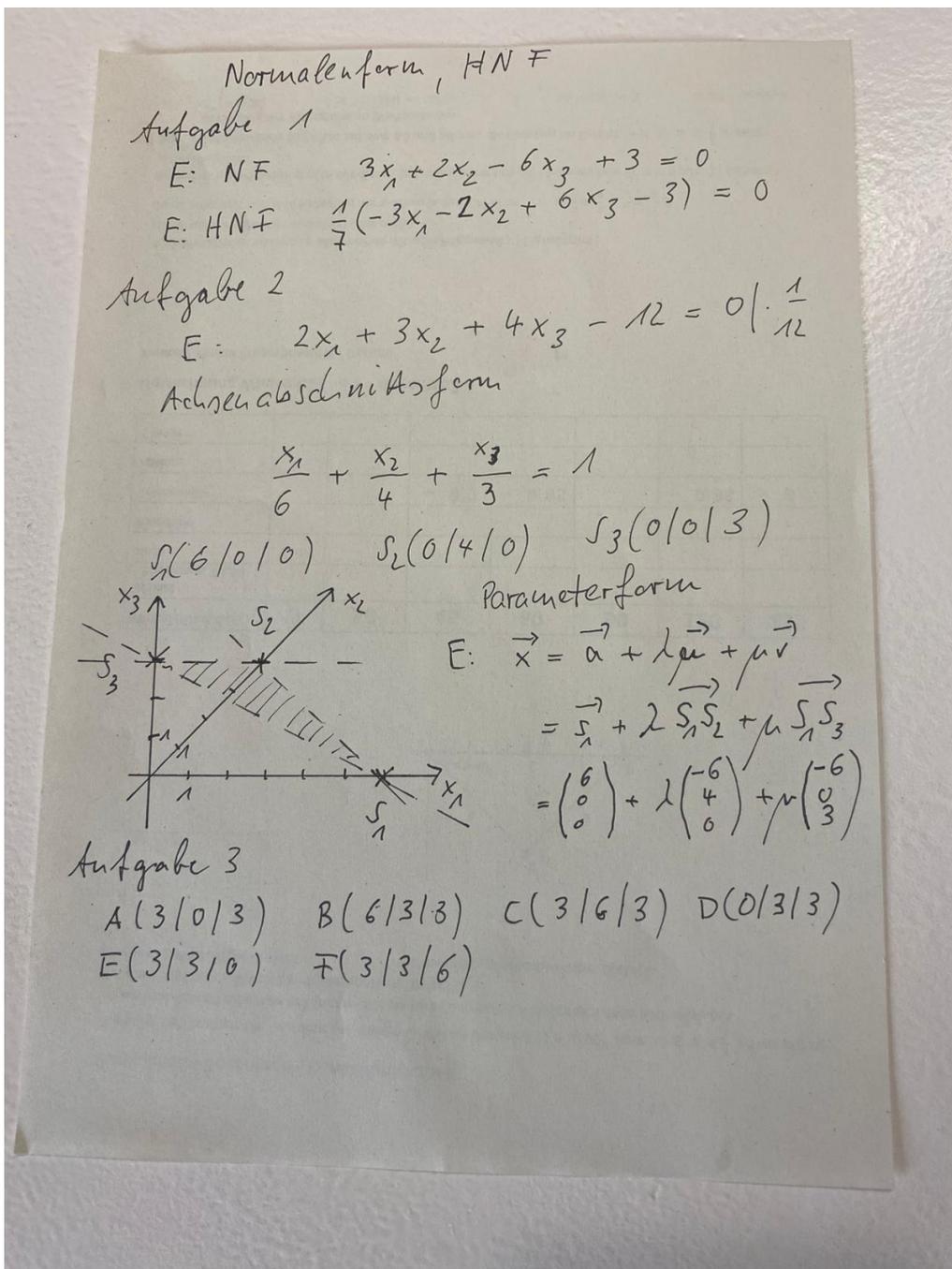


●	$A = (1, 3, 2)$	:
●	$B = (3, 9, 5)$	:
●	$C = (7, 0, 4)$	:
	$u = \text{Vektor}(A, B)$	:
●	$= \begin{pmatrix} 2 \\ 6 \\ 3 \end{pmatrix}$	
	$v = \text{Vektor}(A, C)$	:
●	$= \begin{pmatrix} 6 \\ -3 \\ 2 \end{pmatrix}$	
○	$p : \text{Ebene}(A, C, B)$	:
	$= -3x - 2y + 6z = 3$	
○	$w = u \otimes v$	:
	$= \begin{pmatrix} 21 \\ 14 \\ -42 \end{pmatrix}$	



zu Aufgabe 1



E(A, B, F) Parameterform

$$\begin{aligned} E: \vec{x} &= \vec{a} + \lambda \vec{AB} + \mu \vec{AF} \\ &= \begin{pmatrix} 3 \\ 0 \\ 3 \end{pmatrix} + \lambda \begin{pmatrix} 3 \\ 3 \\ 0 \end{pmatrix} + \mu \begin{pmatrix} 0 \\ 3 \\ 3 \end{pmatrix} \end{aligned}$$

E(B, C, E) Koordinatenform

$$\vec{BC} = \begin{pmatrix} -3 \\ 3 \\ 0 \end{pmatrix} \quad \vec{BE} = \begin{pmatrix} -3 \\ 0 \\ -3 \end{pmatrix}$$

$$\begin{aligned} \vec{BC} \times \vec{BE} &= \begin{pmatrix} -3 \\ 3 \\ 0 \end{pmatrix} \times \begin{pmatrix} -3 \\ 0 \\ -3 \end{pmatrix} = \begin{pmatrix} -9 & -0 & 9 \\ 9 & -0 & 9 \end{pmatrix} \\ &= \begin{pmatrix} -9 \\ -9 \\ 9 \end{pmatrix} = -9 \begin{pmatrix} 1 \\ 1 \\ -1 \end{pmatrix} \end{aligned}$$

$$\vec{n} = \begin{pmatrix} 1 \\ 1 \\ -1 \end{pmatrix}$$

Ausatz  $x_1 + x_2 - x_3 + A_4 = 0$

B oder C oder E einsetzen:

E eingesetzt:  $3 + 3 + 0 + A_4 = 0$

$$\Rightarrow A_4 = -6$$

E: NF  $x_1 + x_2 - x_3 - 6 = 0$

HNF  $\frac{1}{\sqrt{3}}(x_1 + x_2 - x_3 - 6) = 0$