$$det\left(\begin{array}{cccc}t-1 & -1 & 2 \\ -1 & t-1 & 2 \\ 2 & 2 & t-4\end{array}\right) \stackrel{Z=Z_2-2_A}{==} clet\left(\begin{array}{cccc}t-1 & -1 & 2 \\ -2 & \overline{z} & \overline{o} \\ 2 & 2 & t-4\end{array}\right)$$

$$= t clet\left(\begin{array}{cccc}-1 & 2 \\ 2 & t-4\end{array}\right) + t clet\left(\begin{array}{cccc}t-1 & 2 \\ 2 & t-4\end{array}\right)$$

$$= t \left[\begin{array}{cccc}t & -1 & 2 \\ 2 & t-4\end{array}\right]$$

$$(1) = (123)(45)$$

$$= (123)(23)(24)(45)$$

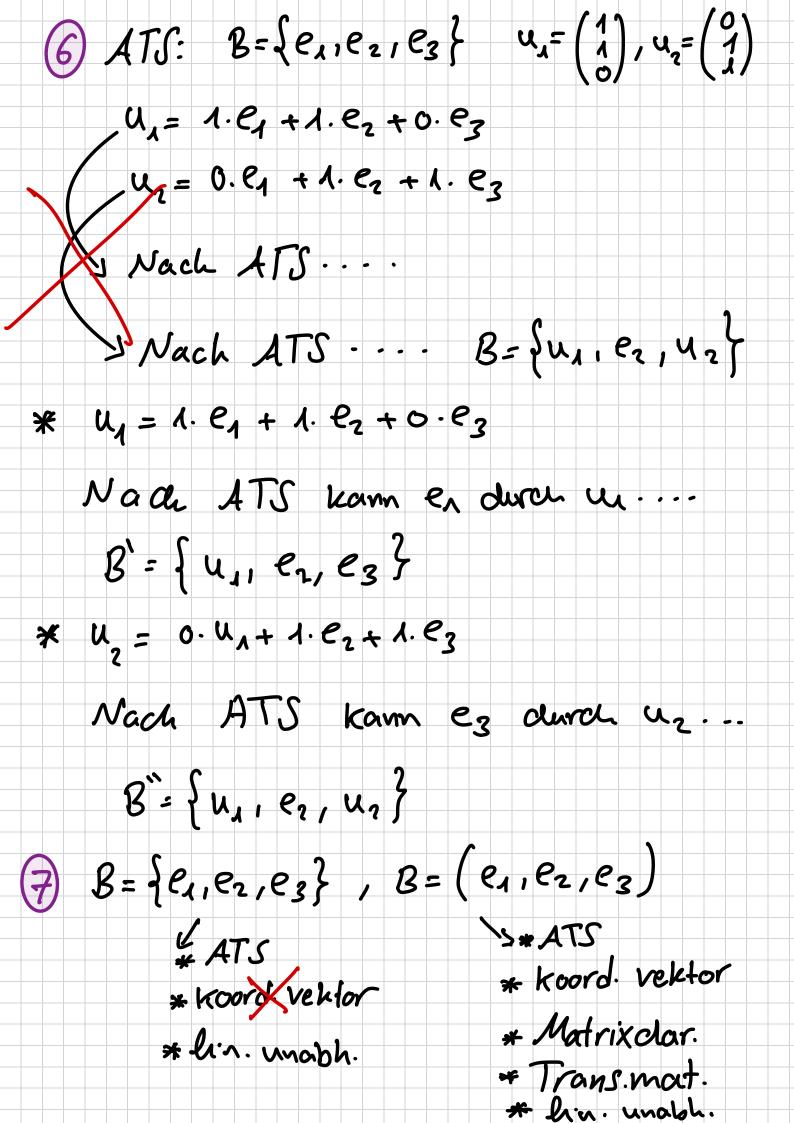
- 2) kgv darf man inder klousur nicht verwender, um die Ord (5) 2 berecher
- 3  $f = (t-\lambda)(t+\lambda)(t^2+\lambda)$  Z<sub>3</sub>[t]

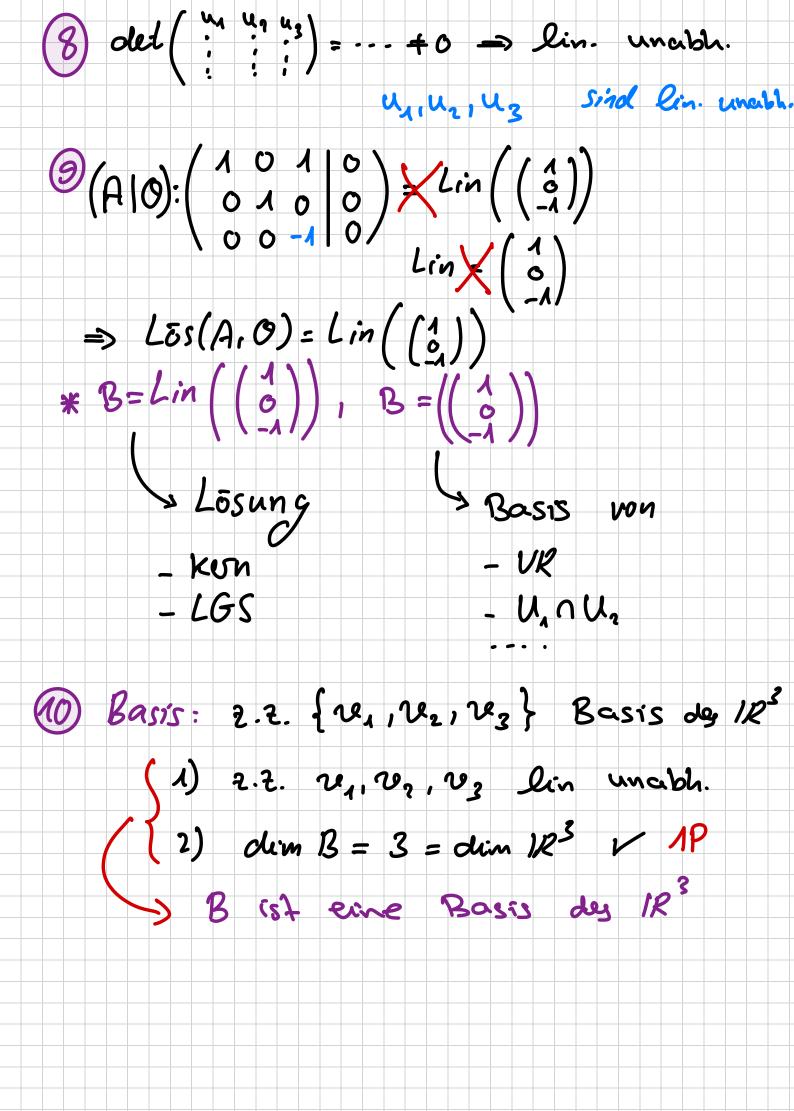
$$= (t+2)(t+1)(t^2+1) \text{ all smd irr.}$$

$$0^{2}+1 \neq 0$$
 $1^{2}+1 \neq 0$ 
 $2^{2}+1 \neq 0$ 

(4) 
$$UR: U = \left\{ \begin{pmatrix} x \\ y \end{pmatrix} \in \mathbb{R}^3 \mid x + y = 2 \right\}$$

$$f = (\ell + \lambda)(\ell^2 + \lambda) \qquad |R[t]$$
irr. in |R[t] irr  $\Rightarrow f$  ist irr.





(12) 
$$f = t^2 + 2$$
,  $S = t^2 + 1$ . Basis best.

$$\frac{1}{2}$$
  $\frac{1}{2}$   $\frac{1}$ 

$$M_{\varepsilon}(f) = \begin{pmatrix} 2 \\ 0 \\ 1 \end{pmatrix}, M_{\varepsilon}(g) = \begin{pmatrix} 1 \\ 0 \\ 1 \end{pmatrix}$$

(13) 
$$f = t^2 + 2$$
 ATS  $B = \{t^0, t^1, t^2\}$ 

$$\begin{pmatrix} 2 \\ 0 \end{pmatrix} = \begin{pmatrix} 2 \cdot t + 0 \cdot t + 1 \cdot t \begin{pmatrix} 2 \\ 0 \end{pmatrix} \begin{pmatrix} 1 \\ 0 \end{pmatrix} \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

Nach ATS...

$$\begin{pmatrix} 2 \\ 0 \end{pmatrix} = 2 \begin{pmatrix} 0 \\ 0 \end{pmatrix} + 0 \begin{pmatrix} 0 \\ 0 \end{pmatrix} + 1 \begin{pmatrix} 0 \\ 0 \end{pmatrix}$$

