

Übungen in AlgGeo $\diamond$ Exercices en AlgGéo $\diamond$ T. E1 $\diamond$ II / 5a

Probl. 1 Cramer: • *Cramer*:

$$\begin{array}{rcl} \left| \begin{array}{cccc} 1x + 2y + 0z + 4w & = & 0 \\ 0x + 1y + 0z + 0w & = & 1 \\ 1x + 0y + 3z + 6w & = & 2 \\ 0x + 1y + 5z + 1w & = & 3 \end{array} \right| \end{array}$$

Probl. 2 $M_4 = \begin{pmatrix} 0 & 0 & 0 & 4 \\ 0 & 0 & 3 & 3 \\ 0 & 2 & 2 & 2 \\ 1 & 1 & 1 & 1 \end{pmatrix} \quad \det(M_4) = ?$

Probl. 3 $\vec{a} = \begin{pmatrix} a \\ b \\ c \end{pmatrix}, \vec{b} = \begin{pmatrix} a \\ -b \\ c \end{pmatrix}, \vec{c} = \begin{pmatrix} -a \\ y \\ -c \end{pmatrix}, \{\vec{a}, \vec{b}, \vec{c}\} \text{ l.a.'l.d.}, \quad y = ?$

Probl. 4 $M = \begin{pmatrix} 2 & 1 & 3 \\ 1 & 2 & 4 \\ 1 & 1 & 6 \end{pmatrix}, \vec{a}(t) = \begin{pmatrix} 7 \\ 1 \\ 4 \end{pmatrix} + t \cdot \begin{pmatrix} 2 \\ 2 \\ -4 \end{pmatrix}$

$$\vec{b}(t) = M \cdot \vec{a}(t) = ?$$