

# Determinant

$$\begin{vmatrix} 0 & 0 & -1 & 3 \\ 0 & 1 & 3 & 5 \\ -1 & 3 & -5 & 0 \\ 3 & 5 & 0 & 0 \end{vmatrix}$$

$$= - \begin{vmatrix} -1 & 3 & -5 & 0 \\ 0 & 1 & 3 & 5 \\ 0 & 0 & -1 & 3 \\ 3 & 5 & 0 & 0 \end{vmatrix} = -\frac{1}{3} \begin{vmatrix} -3 & 9 & -15 & 0 \\ 0 & 1 & 3 & 5 \\ 0 & 0 & -1 & 3 \\ 3 & 5 & 0 & 0 \end{vmatrix} = -\frac{1}{3} \begin{vmatrix} -3 & 9 & -15 & 0 \\ 0 & 1 & 3 & 5 \\ 0 & 0 & -1 & 3 \\ 0 & 14 & -15 & 0 \end{vmatrix} =$$

$$= +\frac{1}{3 \cdot 14} \begin{vmatrix} -3 & 9 & -15 & 0 \\ 0 & -14 & -42 & -70 \\ 0 & 0 & -1 & 3 \\ 0 & 14 & -15 & 0 \end{vmatrix} = \frac{1}{42} \begin{vmatrix} -3 & 9 & -15 & 0 \\ 0 & -14 & -42 & -70 \\ 0 & 0 & -1 & 3 \\ 0 & 0 & -57 & -70 \end{vmatrix} = \frac{1}{42 \cdot (-57)} \begin{vmatrix} -3 & 9 & -15 & 0 \\ 0 & -14 & -42 & -70 \\ 0 & 0 & 57 & -171 \\ 0 & 0 & -57 & -70 \end{vmatrix} =$$

$$= \frac{-1}{2394} \begin{vmatrix} -3 & 9 & -15 & 0 \\ 0 & -14 & -42 & -70 \\ 0 & 0 & 57 & -171 \\ 0 & 0 & 0 & -241 \end{vmatrix} = \frac{-1}{2394} \cdot [(-3) \cdot (-14) \cdot 57 \cdot (-241)] = \frac{1}{2394} \cdot 576\,954 =$$

Det matrice = 241