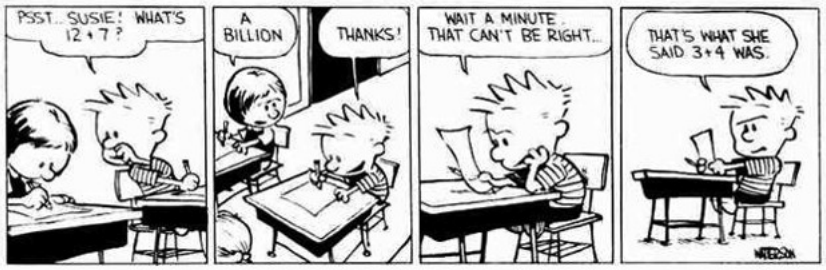
SERIE 7



Esercizio 1

Calcola il determinante delle seguenti matrici il più velocemente possibile:

$$A = \begin{pmatrix} 1+\sqrt{2} & 2-\sqrt{3} \\ 2+\sqrt{3} & 1-\sqrt{2} \end{pmatrix} \qquad B = \begin{pmatrix} 1 & \log_b a \\ \log_a b & 1 \end{pmatrix} \qquad C = \begin{pmatrix} \sin t & \cos t \\ -\cos t & \sin t \end{pmatrix}$$

$$D = \begin{pmatrix} a & -a & a \\ a & a & -a \\ a & -a & -a \end{pmatrix} \qquad E = \begin{pmatrix} 1 & a & 2a+2 \\ 2 & a & 2a+4 \\ 3 & a & 2a+6 \end{pmatrix} \qquad F = \begin{pmatrix} 1 & 7 & -3 \\ 0 & 0 & 0 \\ 2 & -6 & 1 \end{pmatrix}$$

$$G = \begin{pmatrix} 2 & 4 & 1 \\ 8 & 7 & 4 \\ -6 & 4 & -3 \end{pmatrix} \qquad H = \begin{pmatrix} 1 & -8 & 3 \\ 2 & 2 & 2 \\ 2 & -16 & 6 \end{pmatrix} \qquad I = \begin{pmatrix} sinxcosx & vcosxcosy & -vsinxsiny \\ sinxsiny & vcosxsiny & vsinxcosy \\ cosx & -vsinx & 0 \end{pmatrix}$$

$$L = \begin{pmatrix} 2 & -1 & 0 & 1 \\ 0 & 0 & 2 & 5 \\ 0 & 4 & 1 & 0 \\ 4 & 5 & -1 & 1 \end{pmatrix} \qquad M = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 \\ 6 & 7 & 8 & 9 & 10 \\ 11 & 12 & 13 & 14 & 15 \\ a & b & c & d & e \\ f & g & h & i & j \end{pmatrix} \qquad N = \begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 6 \\ 0 & 0 & 0 & 0 & 5 & 5 \\ 0 & 0 & 0 & 4 & 12 & -4 \\ 0 & 0 & 3 & 0 & 6 & 3 \\ 0 & 2 & 2 & 0 & 2 & 2 \\ 1 & 8 & 5 & 1 & 20 & 1 \end{pmatrix}$$

$\frac{1}{2}$