EXERCIȚII PROPUSE (inversa unei matrice)

1) Determinați inversa matricei $A = \begin{pmatrix} 0 & -1 & 3 \\ 2 & 1 & 0 \\ -1 & 0 & 1 \end{pmatrix}$

2) Determinați inversa matricelor (dacă există):

I a) $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$ b) $\begin{pmatrix} 1 & 1 \\ 0 & 1 \end{pmatrix}$ c) $\begin{pmatrix} -1 & 1 \\ 1 & -1 \end{pmatrix}$ e) $\begin{pmatrix} 2 & 3 \\ -1 & 5 \end{pmatrix}$

II a) $\begin{pmatrix} 1 & 0 & 0 \\ 1 & 1 & 0 \\ 1 & 1 & 1 \end{pmatrix}$ b) $\begin{pmatrix} 1 & 0 & 1 \\ 0 & 1 & 0 \\ 1 & 0 & 1 \end{pmatrix}$ c) $\begin{pmatrix} 2 & 1 & -1 \\ -3 & 2 & 1 \\ -1 & 3 & 0 \end{pmatrix}$ d) $\begin{pmatrix} 1 & 2 & 3 \\ 0 & 1 & 2 \\ -1 & 2 & 1 \end{pmatrix}$

3) Rezolvați ecuațiile matriceale:

a) $A \cdot X = C$ b) $X \cdot B = C$ c) $A \cdot X \cdot B = C$, unde:

I $A = \begin{pmatrix} 5 & -4 \\ -8 & 6 \end{pmatrix}$ $B = \begin{pmatrix} 3 & 2 \\ 4 & 3 \end{pmatrix}$ $C = \begin{pmatrix} 1 & -1 \\ 1 & -1 \end{pmatrix}$

II $A = \begin{pmatrix} -2 & 3 & 1 \\ 3 & 6 & 2 \\ 1 & 2 & 1 \end{pmatrix}$ $B = \begin{pmatrix} 2 & 2 & -1 \\ 2 & -1 & 2 \\ -1 & 2 & 2 \end{pmatrix}$ $C = \begin{pmatrix} 1 & 2 & -3 \\ -1 & 2 & 3 \\ 1 & -2 & 3 \end{pmatrix}$

III $A = \begin{pmatrix} 1 & -1 \\ -1 & 2 \end{pmatrix}$ $B = \begin{pmatrix} 1 & 0 & -1 \\ 0 & 2 & -3 \\ -4 & 1 & 3 \end{pmatrix}$ $C = \begin{pmatrix} 1 & 2 & -3 \\ -1 & 2 & 3 \end{pmatrix}$

IV $A = \begin{pmatrix} 2 & 2 & 3 \\ 1 & -1 & 0 \\ -1 & 2 & 1 \end{pmatrix}$ $B = \begin{pmatrix} 1 & 2 \\ 2 & 5 \end{pmatrix}$ $C = \begin{pmatrix} -2 & 0 \\ 0 & -1 \\ 1 & 2 \end{pmatrix}$