

Maatriksvõrrand

Ülesanded

Lahendada maatriksvõrrand.

1. $A - X = B$, kui $A = \begin{pmatrix} 10 & -20 \\ -21 & 4 \end{pmatrix}$, $B = \begin{pmatrix} -1 & 47 \\ 100 & 0 \end{pmatrix}$

2. $C^{-1} + X = D^{-1}$, kui $C = \begin{pmatrix} 1 & -3 \\ 5 & -10 \end{pmatrix}$, $D = \begin{pmatrix} 0 & 10 \\ 1 & 8 \end{pmatrix}$

3. $AX = B$, kui $A = \begin{pmatrix} 1 & -2 \\ 5 & 4 \end{pmatrix}$, $B = \begin{pmatrix} 5 & -8 \\ 11 & 30 \end{pmatrix}$ v: $\begin{pmatrix} 3 & 2 \\ -1 & 5 \end{pmatrix}$

4. $AX = C$, kui $A = \begin{pmatrix} 1 & 0 & -1 \\ 1 & 2 & 1 \\ 0 & 3 & -2 \end{pmatrix}$, $C = \begin{pmatrix} -2 & 2 & 1 \\ 8 & -8 & 5 \\ 5 & 10 & 1 \end{pmatrix}$ v: $\begin{pmatrix} 0 & 1 & 2 \\ 3 & -4 & 1 \\ 2 & -1 & 1 \end{pmatrix}$

5. $XA = B$, kui $A = \begin{pmatrix} 1 & 2 & 3 \\ 2 & 3 & 4 \\ 3 & 4 & 1 \end{pmatrix}$, $B = \begin{pmatrix} 6 & 9 & 8 \\ 0 & 1 & 6 \end{pmatrix}$ v: $\begin{pmatrix} 1 & 1 & 1 \\ 1 & 1 & -1 \end{pmatrix}$

6. $AXB = C$, kui $A = \begin{pmatrix} 2 & -3 \\ 0 & 1 \end{pmatrix}$, $B = \begin{pmatrix} -4 & 1 \\ 3 & 2 \end{pmatrix}$, $C = \begin{pmatrix} 10 & 47 \\ -10 & -3 \end{pmatrix}$ v: $\begin{pmatrix} 7 & 6 \\ 1 & -2 \end{pmatrix}$

7. $D^{-1}X = B$, kui $D = \begin{pmatrix} 0 & 1 & -1 \\ 2 & 0 & 3 \\ -1 & 2 & 4 \end{pmatrix}$, $B = \begin{pmatrix} -2 & -2 & 0 \\ 2 & 0 & -5 \\ 0 & 3 & 6 \end{pmatrix}$ v: $\begin{pmatrix} 2 & -3 & -11 \\ -4 & 5 & 18 \\ 6 & 14 & 14 \end{pmatrix}$

8. $\begin{pmatrix} 1 & -3 \\ 8 & 0 \end{pmatrix} - 2X = 3 \begin{pmatrix} -1 & 1 \\ 0 & 4 \end{pmatrix}$ v: $\begin{pmatrix} 2 & -3 \\ 4 & -6 \end{pmatrix}$

9. $B^{-1}XA^{-1} = C^{-1}$, kui $A = \begin{pmatrix} -1 & -3 \\ 2 & 0 \end{pmatrix}$, $B = \begin{pmatrix} -2 & 4 \\ 0 & 6 \end{pmatrix}$, $C = \begin{pmatrix} 2 & 0 \\ 10 & -1 \end{pmatrix}$

10. $X \begin{pmatrix} 2 & 1 & 3 \\ -1 & 4 & 2 \\ 1 & 2 & -2 \end{pmatrix} + 2 \begin{pmatrix} 3 & 1 & 2 \\ 4 & -1 & 3 \end{pmatrix} = 5 \begin{pmatrix} 0 & -1 & 2 \\ -1 & 2 & 0 \end{pmatrix}$ v: $\frac{1}{42} \begin{pmatrix} -36 & 17 & -163 \\ -192 & 170 & 8 \end{pmatrix}$

11. $XC = AB$, kui $A = \begin{pmatrix} 1 \\ -2 \\ 8 \end{pmatrix}$, $B = (3 \ 4)$, $C = \begin{pmatrix} 1 & 0 \\ -1 & 1 \end{pmatrix}$ v: $\begin{pmatrix} 7 & 4 \\ -14 & 8 \\ 56 & 32 \end{pmatrix}$

12. $A^{-1}XB = C$, kui $A = \begin{pmatrix} -1 & -3 \\ 0 & 10 \end{pmatrix}$, $B = \begin{pmatrix} -2 & 4 \\ 0 & 1 \end{pmatrix}$, $C = \begin{pmatrix} 2 & 0 \\ 10 & -1 \end{pmatrix}$ v: $\begin{pmatrix} 16 & -61 \\ -50 & 190 \end{pmatrix}$