

Prijedlog zadataka:

1 Matrice:

1. Ako su nam date matrice:

$$A = \begin{bmatrix} 3 & 0 \\ -1 & 2 \end{bmatrix} \text{ i } B = \begin{bmatrix} 2 & 1 \\ 4 & 0 \end{bmatrix}, \text{ izračunati: } A \cdot B = ?$$

2. Date su matrice

$$A = \begin{bmatrix} 1 & 3 & 4 \\ -2 & 8 & 3 \end{bmatrix} \text{ i } B = \begin{bmatrix} 1 & 0 & 3 \\ 2 & 3 & 2 \end{bmatrix}. \text{ Izračunati: } A + B = ?$$

3. Date su matrice

$$A = \begin{bmatrix} 1 & 3 & 4 \\ -2 & 8 & 3 \end{bmatrix} \text{ i } B = \begin{bmatrix} 1 & 0 & 3 \\ 2 & 3 & 2 \end{bmatrix}. \text{ Izračunati: } A - B = ?$$

4. Ako su nam date matrice:

$$A = \begin{bmatrix} 3 & 0 \\ -1 & 2 \end{bmatrix} \text{ i } B = \begin{bmatrix} 2 & 1 \\ 4 & 0 \end{bmatrix}, \text{ izračunati: } B \cdot A = ?$$

5. Izračunati vrijednost determinante

$$\det A = \begin{vmatrix} 1 & 2 & 2 & 3 \\ 0 & 0 & 0 & 5 \\ 3 & 0 & 5 & 0 \\ 4 & 1 & 1 & 0 \end{vmatrix}$$

6. Izračunati:  $\det A + \det B$ , ako su zadane determinante

$$\det A = \begin{vmatrix} 1 & 2 & 3 \\ 0 & 0 & 0 \\ 1 & 4 & 8 \end{vmatrix} \quad \text{i} \quad \det B = \begin{vmatrix} 3 & -2 & 1 \\ 6 & 4 & 2 \\ 1 & 5 & 8 \end{vmatrix}.$$

7. Rješiti sistem linearnih algebarskih jednačina

$$\begin{aligned} x + y - 2z &= 3 \\ 3x - y + z &= 2 \\ -2x + 3y - z &= -1 \end{aligned}$$

8. Rješiti sistem linearnih algebarskih jednačina

$$\begin{aligned} 2x + 3y - 2z &= 2 \\ 4x - 2y - 2z &= 1 \\ x + 2y - z &= 0 \end{aligned}$$

9. Rješiti sistem linearnih algebarskih jednačina

$$\begin{aligned} x + y + z &= 6 \\ x - y - z &= -2 \\ 2x - 3y + z &= -4 \end{aligned}$$

10. Rješiti sistem linearnih algebarskih jednačina

$$\begin{aligned}x_1 + 2x_2 + 3x_3 &= 5 \\2x_1 - x_2 - x_3 &= 1 \\x_1 + 3x_2 + 4x_3 &= 6\end{aligned}$$

11. Izračunati:  $\det A + \det B$ , ako su zadane determinante

$$\det A = \begin{vmatrix} 3 & 2 & 1 \\ 6 & 0 & 2 \\ 1 & 4 & 1 \end{vmatrix} \quad \text{i} \quad \det B = \begin{vmatrix} 3 & 0 & 1 \\ 6 & 0 & 2 \\ 1 & 0 & 8 \end{vmatrix}.$$

12. Naći inverznu matricu matrice  $A$

$$A = \begin{bmatrix} 1 & 2 & 3 \\ 0 & 1 & 4 \\ 0 & 0 & 3 \end{bmatrix}$$

13. Izračunati:  $\det A + \det B$ , ako su zadane determinante

$$\det A = \begin{vmatrix} 3 & 2 & 1 \\ 6 & 0 & 2 \\ 1 & 4 & 8 \end{vmatrix} \quad \text{i} \quad \det B = \begin{vmatrix} 3 & 0 & 1 \\ 6 & 4 & 2 \\ 1 & 5 & 8 \end{vmatrix}.$$

14. Sistem jednacina

$$\begin{aligned}x+y+z &= 6 \\2x+y-z &= 1 \\x+2y+z &= 8\end{aligned}$$

rijesiti pomocu Kramerovog pravila.

15. Date su matrice

$$A = \begin{bmatrix} 2 & 3 & 1 \\ -2 & 16 & 0 \end{bmatrix} \quad \text{i} \quad B = \begin{bmatrix} 1 & 0 & -3 \\ 2 & 6 & -8 \end{bmatrix}. \quad \text{Izračunati:}$$

$$\text{a) } A + B = ? \quad \quad \quad RJ.: \begin{bmatrix} 3 & 3 & -2 \\ 0 & 22 & -8 \end{bmatrix}$$

$$\text{b) } A - B = ? \quad \quad \quad RJ.: \begin{bmatrix} 1 & 3 & 4 \\ -4 & 10 & 8 \end{bmatrix}$$

$$\text{c) } 2A - 3B = ? \quad \quad \quad RJ.: \begin{bmatrix} 1 & 6 & 11 \\ -10 & 14 & 24 \end{bmatrix}$$

$$\text{d) } A^T + B^T = ? \quad \quad \quad RJ.: \begin{bmatrix} 3 & 0 \\ 3 & 22 \\ -2 & -8 \end{bmatrix}$$

16. Ako su nam date matrice:

$$A = \begin{bmatrix} 3 & 0 \\ -1 & 2 \end{bmatrix} \quad \text{i} \quad B = \begin{bmatrix} 2 & 1 \\ 8 & 0 \end{bmatrix}, \text{ izračunati:}$$

$$\text{a) } A \cdot B = ? \quad \quad \quad RJ.: \begin{bmatrix} 6 & 3 \\ 14 & -1 \end{bmatrix}$$

$$\text{b) } B \cdot A = ? \quad \quad \quad RJ.: \begin{bmatrix} 5 & 2 \\ 10 & 0 \end{bmatrix}$$