Chiziqli algebra asoslari

Uyga vazifa uchun topshiriqlar:

**Eslatma! Quyidagi topshiriqlarni bajarish uchun namunalar Google Classroomdagi qo'llanma faylida ko'rsatib o'tilgan.*

1. Elementlari ixtiyoriy va o'lchamlari 3×4, 4×2 *va* 4×3 bo'lgan massivlar yarating.

2. Berilgan matritsalar o'lchamlarini aniqlang.

$$\begin{pmatrix} 3 & 5 \\ 2 & 4 \\ -1 & 0 \end{pmatrix} \quad \begin{pmatrix} 4 & 0 & -2 & 0 \\ 3 & 1 & 1 & -5 \\ 23 & -1 & 0 & 0 \end{pmatrix} \quad \begin{pmatrix} 3 & 5 & 0 \\ 2 & 4 & 0 \\ -1 & 0 & 1 \end{pmatrix} \quad \begin{pmatrix} 3 \\ 2 \\ -1 \end{pmatrix} \quad \begin{pmatrix} 2 & 0 & 2 & -4 \end{pmatrix}$$

3. Elementlari ixtiyoriy juft sonlardan iborat 3-tartibli A kvadrat matritsani va elementlari ixtiyoriy toq sonlardan iborat 4-tartibli B kvadrat matritsani yarating.

4. Matritsalarning umumiy ko'rinishini ifodalang.

5. Quyidagi matritsaning bosh diagonalidagi sonlar yig'indisi yordamchi diagonalida joylashgan sonlar yig'indisidan qancha katta?

$$\begin{pmatrix} 3 & 5 & 1 \\ 2 & 4 & 1 \\ -1 & 0 & -2 \end{pmatrix}$$

6. 2×6 *va* 4×2 o'lchamli nol matritsalar yarating

7. Qiymatlari 3, -1, 12 va 6 bo'lgan diagonal matritsa yarating. Ushbu matritsaning o'lchami qanday?

8. O'lchami 3×2 va 2×3 bo'lgan birlik matritsalar yarating.

9. Elementlari mos ravishda 2, 3 va 6 sonlarining ixtiyoriy 4 ta karralilaridan iborat bo'lgan $A, B\ va\ C$ satr vektorlarni yarating.

10. Ixtiyoriy ustun vektor yarating.

11. Agar $\lambda = 3$ va $A = \begin{Vmatrix} 2 & 3 \\ 6 & -1 \end{Vmatrix}$ bo'lsa, $\lambda \bullet A$ ifodaning qiymatini toping.

12. Berilgan $\lambda = \frac{1}{2}$ va $B = \begin{matrix} 4 & 0 \\ 0 & 6 \\ 1 & 4 \end{matrix}$ uchun, $\lambda \bullet B$ ifodaning qiymatini toping.

13. Quyida berilgan matritsalar uchun $A + B\ va\ A - B$ ni hisoblang.

$$A = \begin{pmatrix} 3 & 5 & 1 \\ 2 & 4 & 1 \\ -1 & 0 & -2 \end{pmatrix} \quad B = \begin{pmatrix} 4 & 0 & -2 \\ 3 & 1 & 1 \\ 6 & -1 & 0 \end{pmatrix}$$

14. Quyida berilgan matritsalar uchun $A \bullet B$ ni hisoblang.

$$A = \begin{pmatrix} 3 & 5 & 1 \\ 2 & 4 & 1 \\ -1 & 0 & -2 \end{pmatrix} \quad B = \begin{pmatrix} 4 & 0 & -2 \\ 3 & 1 & 1 \\ 6 & -1 & 0 \end{pmatrix}$$

15. Berilgan matritsalarni transponirlang.

$$\begin{pmatrix} 3 & 5 & 1 \\ 2 & 4 & 1 \\ -1 & 0 & -2 \end{pmatrix} \quad \begin{pmatrix} 4 & 0 \\ 3 & 1 \end{pmatrix} \quad \begin{pmatrix} 3 & 5 & -9 \\ 2 & 4 & 0 \end{pmatrix} \quad \begin{pmatrix} 3 \\ 2 \\ -1 \end{pmatrix} \quad \begin{pmatrix} 2 & 0 & 2 & -4 \end{pmatrix}$$

16. Berilgan matritsalar uchun qarama-qarshi matritsalarni yozing.

$$\begin{pmatrix} 3 & 5 & 1 \\ 2 & 4 & 1 \\ -1 & 0 & -2 \end{pmatrix} \quad \begin{pmatrix} 4 & 0 \\ 3 & 1 \end{pmatrix} \quad \begin{pmatrix} 3 & 5 & -9 \\ 2 & 4 & 0 \end{pmatrix} \quad \begin{pmatrix} 3 \\ 2 \\ -1 \end{pmatrix} \quad \begin{pmatrix} 2 & 0 & 2 & -4 \end{pmatrix}$$

17. Berilgan matritsalar determinantlarini hisoblang.

$$\begin{pmatrix} 2 & 3 & 4 \\ 5 & -2 & 1 \\ 1 & 2 & 3 \end{pmatrix} \quad \begin{pmatrix} 3 & -2 \\ 5 & -4 \end{pmatrix} \quad \begin{pmatrix} 3 & 1 & 2 & 3 \\ 4 & -1 & 2 & 4 \\ 1 & -1 & 1 & 1 \\ 4 & -1 & 2 & 5 \end{pmatrix}$$

18. Berilgan matritsalar uchun teskari matritsalarni aniqlang.

$$\begin{pmatrix} 2 & 5 & 7 \\ 6 & 3 & 4 \\ 5 & -2 & -3 \end{pmatrix} \quad \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} \quad \begin{pmatrix} 2 & 1 & -1 \\ 5 & 2 & 4 \\ 7 & 3 & 2 \end{pmatrix}$$