



TOSHKENT IRRIGATSIYA VA QISHLOQ
XO'JALIGINI MEXANIZATSIYALASH
MUHANDISLARI INSTITUTI



MAVZU:
MATRITSA VA ULAR USTIDA AMALLAR

REJA:

- 1. Matritsani songa ko 'paytirish***
- 2. Matritsalarini qo 'shish***
- 3. Matritsalarini ko 'paytirish***

$\begin{pmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{pmatrix}$ - *3x3 o'chamdagi kvadrat matritsa*

$(a_{11} a_{12} a_{13})$ - *yo'l matritsa*

$\begin{pmatrix} a_{11} \\ a_{21} \\ a_{31} \end{pmatrix}$ - *ustun matritsa*

$E = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$ - *birlik matritsa*

$\begin{pmatrix} 0 & 0 \\ 0 & 0 \end{pmatrix}$ - *nolli matritsa*

Matritsani songa ko 'paytirish

Misol 1. $A = \begin{pmatrix} 2 & 1 & 4 \\ 5 & 2 & 3 \end{pmatrix}$ va $B = \begin{pmatrix} 4 & -3 \\ 1 & 5 \\ 2 & -1 \end{pmatrix}$

matritsalar berilgan.

$2A$ va **$3B$** larni hisoblang.

Yechish. $2A = \begin{pmatrix} 4 & 2 & 8 \\ 10 & 4 & 6 \end{pmatrix},$

$$3B = \begin{pmatrix} 12 & -9 \\ 3 & 15 \\ 6 & -3 \end{pmatrix}$$

Berilgan matritalsarning yig'indisini toping.

Misol 2. $A = \begin{pmatrix} 3 & -2 \\ 5 & -4 \end{pmatrix}, B = \begin{pmatrix} 3 & 4 \\ 2 & 5 \end{pmatrix}.$

Yechish. $A + B = \begin{pmatrix} 3 + 3 & -2 + 4 \\ 5 + 2 & -4 + 5 \end{pmatrix} = \begin{pmatrix} 6 & 2 \\ 7 & 1 \end{pmatrix}$

Misol 3. $A = \begin{pmatrix} 2 & 5 \\ 6 & 3 \\ 5 & -2 \end{pmatrix}, B = \begin{pmatrix} 2 & 1 \\ 5 & 2 \\ 7 & 3 \end{pmatrix}$

Yechish. $A + B = \begin{pmatrix} 2 & 5 \\ 6 & 3 \\ 5 & -2 \end{pmatrix} + \begin{pmatrix} 2 & 1 \\ 5 & 2 \\ 7 & 3 \end{pmatrix} = \begin{pmatrix} 4 & 6 \\ 11 & 5 \\ 12 & 1 \end{pmatrix}$

Berilgan matritalsarni ko'paytiring.

$$1. A = \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}, B = \begin{pmatrix} 1 & 5 \\ 0 & 7 \end{pmatrix}$$

$$\text{Yechish. } A \cdot B = \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} \cdot \begin{pmatrix} 1 & 5 \\ 0 & 7 \end{pmatrix} =$$

$$\begin{pmatrix} 1 \cdot 1 + 2 \cdot 0 & 1 \cdot 5 + 2 \cdot 7 \\ 3 \cdot 1 + 4 \cdot 0 & 3 \cdot 5 + 4 \cdot 7 \end{pmatrix} =$$

$$= \begin{pmatrix} 1 & 19 \\ 3 & 43 \end{pmatrix}$$

Berilgan matritalsarni ko'paytiring.

$$2.A = \begin{pmatrix} 5 & 8 & -4 \\ 6 & 9 & -5 \\ 4 & 7 & -3 \end{pmatrix}, B = \begin{pmatrix} 3 & 2 \\ 4 & 1 \\ 1 & 2 \end{pmatrix}$$

$$A \cdot B = \begin{pmatrix} 5 & 8 & -4 \\ 6 & 9 & -5 \\ 4 & 7 & -3 \end{pmatrix} \cdot \begin{pmatrix} 3 & 2 \\ 4 & 1 \\ 1 & 2 \end{pmatrix} =$$

$$\begin{pmatrix} 15 + 32 - 4 & 10 + 8 - 8 \\ 18 + 36 - 5 & 12 + 9 - 10 \\ 12 + 28 - 3 & 8 + 7 - 6 \end{pmatrix} = \begin{pmatrix} 43 & 10 \\ 49 & 11 \\ 37 & 9 \end{pmatrix}$$

Mustaqil yechish uchun misollar

Berilgan matritsalarini ko'paytiring.

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

$$3. A = \begin{pmatrix} 2 & 1 & -1 \\ 5 & 2 & 4 \\ 7 & 3 & 2 \end{pmatrix}, \quad B = \begin{pmatrix} 2 & -4 & 9 \\ 7 & 3 & -6 \\ 7 & 9 & -9 \end{pmatrix}.$$

ADABIYOTLAR RO'YHATI:

- 1.R.Iskandarov „Oliy algebra” Toshkent „O’qituvchi” 1960-yil*
- 2.Y.U.Soatov „Oliy matematika” Toshkent „O’qituvchi” 1992-yil
I-tom*
- 3.B.Abdualimov „Oliy matematika” Toshkent „O’qituvchi” 1994-
yil*
- 4.T.N Qori Niyoziy „Oliy matematika kursi” 1-2-3-4 qismlar 1969-yil*
- 5.N.S.Piskunov „Diferensial va integral xisob” 1-2 tomlar toshkent
1974-yil*
- 6.B.A.Xudoyorov „Matematikadan misol va masalalar
to’plami” toshkent 2018-yil*
- 7.V.P.Minorskiy „Oliy matematikadan misol va masalalar
to’plami” Toshkent 1969-yil*
- 8.B.Abdualimov,SH.Solihov „Oliy matematikadan qisqa
kursi” Toshkent 1981-yil*

*E'tiboringiz uchun
rahmat!*