Bir xil o'lchamdagi A=(a_{ij}) va B=(b_{ij}) matritsalarning yig'indisi deb mos elementlar $c_{ij} = a_{ij} + b_{ij}$ kabi aniqlanadigan shu o'lchamdagi C=A+B matritsaga aytiladi.

A=(a_{ij}) matritsaning $\lambda \neq 0$ songa ko'paytmasi deb, elementlari C= $\lambda * a_{ij}$ kabi aniqlanadigan shu o'lchamdagi C= λ*A martritsaga aytiladi.

MATRITSALAR USTIDA AMALLAR.

QO'SHISH AYIRISH KO`PAYTIRISH

P maydon ustuda istalgan ikki nomdosh matritsani qo'shish quyidagicha bo'ladi

$$A = \begin{pmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \vdots & \vdots & & \vdots \\ a_{n1} & a_{n2} & \dots & a_{nn} \end{pmatrix} \qquad B = \begin{pmatrix} b_{11} & b_{12} & \dots & b_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \vdots & \vdots & & \vdots \\ b_{n1} & b_{n2} & \dots & b_{nn} \end{pmatrix}$$

$$A+B = \begin{pmatrix} a_{11}+b_{11} & a_{12}+b_{12} & \dots & a_{1n}+b_{1n} \\ a_{21}+b_{21} & a_{22}+b_{21} & \dots & a_{2n}+b_{2n} \\ \vdots & \vdots & & \vdots \\ a_{n1}+b_{n1} & a_{n2}+b_{n2} & \dots & a_{nn}+b_{nn} \end{pmatrix}$$

Demak, yig'indi matritsaning $a_{ij} + b_{ij}$ elementlari qo'shiluvchi matritsalarning mos

a_{ij} va b_{ij} elementlar yig'indilariga teng.

Ravshanki matritsalarni qo'shish kommutativ va assositiv ekanligi kelib chiqadi.

Istalgan matritsalar uchun

A+B = B+A ,   A+(B+C) = (A+B)+C

tengliklar o'rinlidir.

A va B matritsalar ustida Ayirishni ko'ramiz

$$A = \begin{pmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \vdots & \vdots & & \vdots \\ a_{n1} & a_{n2} & \dots & a_{nn} \end{pmatrix} \qquad B = \begin{pmatrix} b_{11} & b_{12} & \dots & b_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \vdots & \vdots & & \vdots \\ b_{n1} & b_{n2} & \dots & b_{nn} \end{pmatrix}$$

$$A+B = \begin{pmatrix} a_{11}-b_{11} & a_{12}-b_{12} & \dots & a_{1n}-b_{1n} \\ a_{21}-b_{21} & a_{22}-b_{21} & \dots & a_{2n}-b_{2n} \\ \vdots & \vdots & & \vdots \\ a_{n1}-b_{n1} & a_{n2}-b_{n2} & \dots & a_{nn}-b_{nn} \end{pmatrix}$$

kelib chiqadi

Xususiy holda   A − A = 0 , A − Q = A , Q − A = 0

Natija. Nomdosh matritsalar to'plami additiv guruppa bo'ladi.

MATRITSANI MATRITSAGA KO'PAYTIRISH

m = 3   n = 3 k = 3

$$A_{m*n} = \begin{pmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{pmatrix} \qquad B_{n*k} = \begin{pmatrix} b_{11} & b_{12} & b_{13} \\ b_{21} & b_{22} & b_{23} \\ b_{31} & b_{32} & b_{33} \end{pmatrix}$$

A_{m*n} va B_{n*k} matritsalarni ko'paytirish qoidasi quyidagidan iborat:

$$A_{m*n} * B_{n*k} = C_{m*k}$$

ko'paytmasining har C_{ij} elementlarini hosil qilish uchun A_{m*n} ning i − satridagi elementlarni B_{n*k} ning j − ustuunidagi mos elementlarga ko'paytirib natijalar qo'shiladi, ya'ni:

$C_{ij} = a_{ij}*b_{1i} + a_{i2}*b_{2i} + a_{i3} * b_{3i}$ ko'rinishga keladi.

TESKARI MATRITSA

A kvadrat matritsa uchun A*A^{-1}=A^{-1}*A=E tenglik bajarilsa A^{-1} matritsa A matritsaga **teskari matritsa** deyiladi.

Har qanday $|A| \neq 0$ (Detirminanti) 0 dan farqli A matritsa uchun A^{-1}matritsa mavjud va yagona bo'ladi.

A MATRITSANING TESKARI MATRITSASI

$$A^{-1} = \frac{1}{A}*\begin{pmatrix} A_{11} & A_{12} & ... & A_{1n} \\ A_{21} & A_{22} & ... & A_{2n} \\ \vdots & \vdots & & \vdots \\ A_{n1} & A_{n2} & ... & A_{nn} \end{pmatrix} \quad (1)$$

formula bilan aniqlanadi.

1-Misol:

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

Matritsalar ustida **A+B** ifodalang

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

A+B = $\begin{pmatrix} 3 & -2 \\ -2 & 5 \end{pmatrix}$

2-Misol:

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

A , B va C matritsalar berilgan. **3A − B − C** matritsani toping:

3A − B − C = 3*$\begin{pmatrix} 3 & -1 \\ 2 & 4 \end{pmatrix}$ − $\begin{pmatrix} 4 & 5 \\ 2 & 6 \end{pmatrix}$ − $\begin{pmatrix} -1 & 4 \\ 5 & 3 \end{pmatrix}$ = $\begin{pmatrix} 9 & -3 \\ 2 & 4 \end{pmatrix}$ − $\begin{pmatrix} 4 & 5 \\ 2 & 6 \end{pmatrix}$ − $\begin{pmatrix} -1 & 4 \\ 5 & 3 \end{pmatrix}$ =

= $\begin{pmatrix} 9-4-(-1) & -3-5-4 \\ 2-2-5 & 4-6-3 \end{pmatrix}$ = $\begin{pmatrix} 6 & -12 \\ -5 & -5 \end{pmatrix}$

$$3A - B - C = \begin{pmatrix} 6 & -12 \\ -5 & -5 \end{pmatrix}$$

Matritsalarni ko'paytirishda A_{m*n} va B_{n*k} A_{m*n} matritsaning satrlar soni B_{n*k} matritsaning ustunlar soniga teng bo'lishi yetalidir. **A * Q = Q**

3-misol

$A_{3*3}\begin{pmatrix} 1 & -1 & 2 \\ 3 & -3 & 7 \\ 2 & -3 & 5 \end{pmatrix}$ $B_{3*1}\begin{pmatrix} 2 \\ 9 \\ 2 \end{pmatrix}$ 3=3

$$A_{3*3}*B_{3*1}=\begin{pmatrix}1 & -1 & 2\\3 & -3 & 7\\2 & -3 & 5\end{pmatrix}*\begin{pmatrix}2\\9\\2\end{pmatrix}=\begin{pmatrix}1*2+((-1)*9)+2*2\\3*2+((-3)*9)+7*2\\2*2+((-3)*9)+5*2\end{pmatrix}=\begin{pmatrix}2-9+4\\6-27+14\\4-27+10\end{pmatrix}$$

$$=\begin{pmatrix}-3\\-7\\-13\end{pmatrix} \qquad C_{3*1}=\begin{pmatrix}-3\\-7\\-13\end{pmatrix}$$

4-misol

$$A_{3*3}=\begin{pmatrix}1 & -2 & 3\\-1 & 4 & -2\\2 & -2 & 7\end{pmatrix} \quad B_{3*3=}\begin{pmatrix}1 & 1 & 1\\1 & -2 & 1\\2 & 2 & 4\end{pmatrix}$$

$$A_{3*3}*B_{3*3=}\begin{pmatrix}1 & -2 & 3\\-1 & 4 & -2\\2 & -2 & 7\end{pmatrix}*\begin{pmatrix}1 & 1 & 1\\1 & -2 & 1\\2 & 2 & 4\end{pmatrix}$$

$$\begin{pmatrix}1*1+(-2)*1+3*2 & 1*1+(-2)*(-1)+3*4 & 1*1+(-2)*(-1)+3*4\\(-1)*1+4*1+(-2)*2 & (-1)*1+4*2+(-2)*2 & (-1)*1+4*(-1)+(-2)*4\\2*1+(-2)*1+7*2 & 2*1+(-2)*2+7*2 & 2*1+(-2)*(-1)+7*4\end{pmatrix}$$

$$=\begin{pmatrix}5 & 3 & 15\\-1 & 3 & -13\\14 & 12 & 32\end{pmatrix}=C_{3*3}$$

$$A_{3*3}*B_{3*3=}C_{3*3}$$

5-Misol.

A matritsaga teng matritsani toping.

$$A=\begin{pmatrix}2 & -1 & 0\\-1 & 1 & 3\\1 & 2 & -1\end{pmatrix}$$

Matritsani **determinant**ini hisoblaymiz

$$\Delta=\begin{vmatrix}2 & -1 & 0\\-1 & 1 & 3\\1 & 2 & -1\end{vmatrix}= -16 \neq 0$$

Demak, A^{-1} mavjud. Δ ning algebraik to'ldiruvchilarini hisoblaymiz

$A_{11}=\begin{vmatrix}1 & 3\\2 & -1\end{vmatrix}= -7$

$A_{12}=-\begin{vmatrix}-1 & 3\\1 & -1\end{vmatrix}= 2$

$A_{13}=\begin{vmatrix}-1 & 1\\1 & 2\end{vmatrix}= 3$

$A_{21}=\begin{vmatrix}-1 & 0\\2 & -1\end{vmatrix}= -1$

$A_{22}=\begin{vmatrix}2 & 0\\1 & -1\end{vmatrix}= -2$

$A_{23}=-\begin{vmatrix}2 & -1\\1 & 2\end{vmatrix}= -5$

$A_{31}=\begin{vmatrix}-1 & 0\\1 & 3\end{vmatrix}= -3$

$A_{32}=-\begin{vmatrix}2 & 0\\-1 & 3\end{vmatrix}= -6$

$$A_{33} = \begin{vmatrix} 2 & -1 \\ -1 & 1 \end{vmatrix} = 1$$

Teskari matritsani (1) formuladan topamiz

$$A^{-1} = \frac{-1}{16} * \begin{pmatrix} -7 & -1 & -3 \\ 2 & -2 & -6 \\ -3 & -5 & 1 \end{pmatrix} = \begin{pmatrix} \frac{7}{16} & \frac{1}{16} & \frac{3}{16} \\ \frac{-1}{8} & \frac{1}{8} & \frac{3}{8} \\ \frac{3}{16} & \frac{5}{16} & -\frac{1}{16} \end{pmatrix}$$

Bunday ko'rinishlarga ega bo'lgan matritsalarni qo'shish, ayirish va ko'paytirishda Oliy ta'limdagi talabalariga qo'shimcha material sifatida tavsiya etish mumkin.

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CULTURE SHOCK

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Annotation: ⬚ Culture shock occurs when an individual confronts another culture. Culture shock is a perfectly normal, emotional reaction that may include feelings of depression, anxiety, or disorientation and that may even manifest itself physically by affecting an individual's health or their sleeping or eating habits.

⬚ Культурный шок возникает, когда человек сталкивается с другой культурой. Культурный шок — это совершенно нормальная эмоциональная реакция, которая может включать чувство депрессии, беспокойства или дезориентации и может даже проявляться физически, влияя на здоровье человека, его привычки сна или питания.

⬚ Madaniyat zarbasi inson boshqa madaniyatga duch kelganida sodir bo'ladi. Madaniy shok - bu mutlaqo normal hissiy reaktsiya bo'lib, u ruhiy tushkunlik, tashvish yoki orientatsiyani o'z ichiga olishi mumkin va hatto jismoniy jihatdan namoyon bo'lishi mumkin, bu odamning sog'lig'i, uyqusi yoki ovqatlanish odatlariga ta'sir qiladi.

1.Positive impact.

Положительное влияние.

Ijobiy ta'sirlar.

2.Breaks the routine.

Ломает рутину.

Tartibni buzadi.

Key words; Cultural, experience, interact, mindset, unpleasant, process, unfamiliar, opportunity.

Culture shock gives you the opportunity to try new things.

New cultures usually bring you the opportunity to experience entirely different things, which can be both unique and exciting. Over time, it can have a powerful and positive impact on a person's life. Exposure to a new culture is a very positive thing, especially for young people. It gives the opportunity to learn how to adapt, interact and present yourself within an entirely new culture, and thus develop a global mindset.

Cultural shock disrupts the order of your life.

Whether you are deciding to travel around the world or living abroad in another country, you have to bear in mind that culture shock is an "unpleasant" experience you must go through. Since culture shock may cause people to have negative experiences, everyone tries to avoid it, but they fail to see that they should embrace it instead. So, when living abroad in culturally different country, it becomes nearly impossible to avoid culture shock easily - despite how positive your attitude might be since it is a natural and an enriching process a person must go through so as to grow as an individual.