VIZUAL VA TARQATMA MATERIALLAR

Xossalari:

- Determinantning satrlarini ustunlari bilan almashtirilsa (va aksincha) uning qiymati o’zgarmaydi .
- Ikkita ustuni (yoki satrini) almashtirilsa determinant ishorasi o’zgaradi.
- Ikkita bir xil ustuni (satri) bo’lgan determinant nolga teng
- Agar biror ustuni (satrini) barcha elementlarini biror songa ko’paytirilsa , determinant qiymati shu songa ortadi .
- Ikkita ustuni (satri) proportsional bo’lgan determinant qiymati nolga teng .
- Agar biror ustuni (satri) ikkita qo’shiluvchidan iborat bo’lsa , u holda bu determinantni ikkita qo’shiluvchi sifatida yozish mumkin , bunda birinchi 1- determinantda birinchi qo’shiluvchi va qolgan barcha elementlar 2- determinantda ikkinchi qo’shiluvchi va qolgan barcha elementlar saqlanadi.
- Biror ustunini (satrini) barcha elemenrlerini biror .
- ko’paytirib boshqa ustuniga qo’shilsa, determinant qiymati o’zgarmaydi.

1-ilova

Juftlikda ishlash uchun topshiriqlar

1-variant	2-variant
1. $\begin{vmatrix} 7 & 0 & 1 \\ 3 & 5 & 8 \\ -4 & 2 & 3 \end{vmatrix}$ determinantni 1- satr elementlari bo'yicha yoyib hisoblang.	2. $\begin{vmatrix} 3 & 4 & 15 \\ 2 & 8 & 16 \\ 4 & 20 & 7 \end{vmatrix}$ umumiy ko'paytuvchilarini determinant tashqarisiga chiqarish yo'li bilan hisoblang.

2-ilova

"Insert" jadvali

O'qish jarayonida olingan ma'lumotlarni aloxida o'zlari tizimlashtiradilar-jadval ustunlariga "kiritadilar" matnda belgilangan quyidagi belgilarga muvofiq:

" V " – men bilgan ma'lumotlarga mos;
" - " - men bilgan ma'lumotlarga zid;
" + " – men uchun yangi ma'lumot;
" ? " – men uchun tushunarsiz yoki ma'lumotni aniqlash, to'ldirish talab etiladi.

Tushunchalar	V	+	-	?
Ikkinchi tartibli determinant				

Uchinchi tartibli determinant					
Determinant minori					
Algebraik to’ldiruvchi					
Yuqori tartibli determinant					

TESTLAR

Savollar	To’g’ri javob	Muqobil javob	Muqobil javob	Muqobil javob
Ikkinchi tartibli determinant deb qanday songa aytiladi?	* $\Delta = a_{11}a_{22} - a_{12}a_{21}$ songa ikkinchi tartibli beterminant deb ataladi.	$\Delta = a_{11}a_{22} + a_{12}a_{21}$ songa ikkinchi tartibli beterminant deb ataladi.	$\Delta = a_{11}a_{24} - a_{42}a_{21}$ songa ikkinchi tartibli beterminant deb ataladi.	$\Delta = a_{11}a_{21} + a_{12}a_{22}$ songa ikkinchi tartibli beterminant deb ataladi.
$\Delta = \begin{vmatrix} 3 & -2 \\ 4 & 6 \end{vmatrix}$ ni hisoblang	* $\Delta = 26$	$\Delta = 36$	$\Delta = 23$	$\Delta = 24$

$\Delta=\begin{vmatrix}2 & 3\\ 6 & -10\end{vmatrix}$ ni hisoblang	* $\Delta=-38$	$\Delta=-36$	$\Delta=24$	$\Delta=26$
$\Delta=\begin{vmatrix}3 & -2\\ -4 & 5\end{vmatrix}$ ni hisoblang	* $\Delta=7$	$\Delta=6$	$\Delta=8$	$\Delta=10$
$\Delta=\begin{vmatrix}\sqrt{a} & -1\\ a & \sqrt{a}\end{vmatrix}$ ni hisoblang	* $\Delta=2a$	$\Delta=3a$	$\Delta=5a$	$\Delta=6a$
$\Delta=\begin{vmatrix}\sin\alpha & \cos\alpha\\ -\cos\alpha & \sin\alpha\end{vmatrix}$ ni hisoblang	* $\Delta=1$	$\Delta=0$	$\Delta=\cos\alpha$	$\Delta=-1$
$\Delta=\begin{vmatrix}a & 1 & a\\ -1 & a & 1\\ a & -1 & a\end{vmatrix}$ ni hisoblang	* $\Delta=4a$	$\Delta=7a$	$\Delta=5a$	$\Delta=3a$
$\Delta=\begin{vmatrix}1 & b & 1\\ 0 & b & 0\\ b & 0 & a\end{vmatrix}$ ni hisoblang	* $\Delta=ab-b^2$	$\Delta=4b$	$\Delta=2b$	$\Delta=2b^2$
$\Delta=\begin{vmatrix}x & 1 & x\\ 1 & -x & -1\\ x & 1 & x\end{vmatrix}$ ni hisoblang	* $\Delta=0$	$\Delta=-3x^2$	$\Delta=-2x$	$\Delta=2x$

$\Delta = \begin{vmatrix} a & -a & a \\ a & a & -a \\ a & -a & -a \end{vmatrix}$ ni hisoblang	* $\Delta = -4a^3$	$\Delta = 2a^2$	$\Delta = 3a^2$	$\Delta = 5a^3$
$\Delta = \begin{vmatrix} 4 & 3 & 6 \\ -3 & 2 & -5 \\ 1 & -1 & 7 \end{vmatrix}$ ni hisoblang	* $\Delta = 90$	$\Delta = 86$	$\Delta = 91$	$\Delta = 89$