**AMALIY MASHG’ULOT**

**Matrisalar. Matrisalar ustida amallar. Matrisa tushunchasi. Matrisalarni qo’shish, ayirish, o’zgarmas songa ko’paytirish hamda matrisani matrisaga ko’paytirish.**

 Misol.  matritsa bеrilgan:

1) *A+2B, 2) 3A-B, 3) A-B* lar topilsin.

1) 





**Topshiriqlar:**

1-topshiriq.

1. Matritsalar ustida amallarni bajaring.

А= В= 2А -5Е +4В2=?

2. Matritsalar ustida amallarni bajaring.

А= В= 2В2+3А-2Е=?

3. Matritsalar ustida amallarni bajaring.

А= В= (А+В)2-3В=?

4. Matritsalar ustida amallarni bajaring.

А= В= 2В2-3Е+4А=?

2-topshiriq.

 Quyidagi matritsalarning transponirlangan matritsalarini toping:

$A^{T}$, $B^{T}=?$

1. А= В=

2. А= В=

Misol.

matritsa berilgan: *AB* ni topilsin.

Yechish.

2.  va  matritsalar berilgan: *AB* va *BA* ni toping.

Yechish*.*

*AB*=

*BA=*

**Misollar:**

1. Matritsalar ustida amallarni bajaring.

  *AB* va *BA* ni toping.

2.   *AB* va *BA* ni toping.

**Ikkinchi, uchinchi tartibli determinantlar va ularning xossalari. Laplas teoremasi. Teskari matrisa. Ikkinchi tartibli determinant. Uchinchi tartibli determinant. Determinantning xossalari. Minor va algebraik to’ldiruvchilar. Laplas teoremasi. Teskari matrisa**



**Misollar.**

Determinantlarni hisoblang.

1. 2.  3.  4.  5.  6. 

7.8. 9. 10. 

**Topshiriq.**

Uchinchi tartibli determinantni hisoblang.

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 

Misol. Berilgan  matritsaga teskari matritsani toping.

Yechish. Matritsaning determinantini hisoblaymiz:



 Demak, A matritsa maxsusmas matritsa ekan. Endi  algebraik toʻldiruvchilarni hisoblaymiz:

   



 Teskari matritsa tuzamiz:



  ekanini tekshirish mumkin.

Misollar.

1. Teskari matritsani toping va *A A-1=E* ekanligini isbotlang.

А= А-1=?

2. Teskari matritsani toping va *A A-1=E* ekanligini isbotlang.

А= А-1=?

3. Teskari matritsani toping va *A A-1=E* ekanligini isbotlang.

А= А-1=?

4. Teskari matritsani toping va *A A-1=E* ekanligini isbotlang.

А= А-1=?

Topshiriqlar.

1-topshiriq .

1. Teskari matritsani toping va *A A-1=E* ekanligini isbotlang.

А= А-1=?.

1. Teskari matritsani toping va *A A-1=E* ekanligini isbotlang.

А= А-1=?

3. Teskari matritsani toping va *A A-1=E* ekanligini isbotlang.

А= А-1=?

4. Teskari matritsani toping va *A A-1=E* ekanligini isbotlang.

А= А-1=?

5. Teskari matritsani toping va *A A-1=E* ekanligini isbotlang.

А= А-1=?