

1. Matritsalarini ko'paytirish a'mali xossalari (sitr matritsa, ustun matritsa, kommutativ, assosativ, distrebutivligi)
2. Chiziqli fazo o'lchami va bazisi (nol element, chiziqli erkli vektorlar, n-o'lchamli chiziqli fazo, cheksiz o'lchamli fazo)
3. Kvadratik formani kanonik shaklga keltirish. Yakobi usuli (bosh minorlar, diogonal elementlar)
4. Evklid fazolarning izomorfizmi. O'lchami (evklid fazosi, evklid fazolarining izomorf bolish sharti)
5. Bir jinsli tenglamalar sistemasi (erkli koefisientlar, erksiz koefisientlar, echimlar to'plami, fundamental echimlar)
6. Chiziqli fazoning qism fazosi (ta'rif, qism fazo bo'lish sharti, xosmas qism fazolar)
7. Chiziqli fazolar izomorfizmi. Izomorfizm (yig'indisi, songa ko'paytirish obrazi)
8. Bichiziqli va kvadratik formalar (Chiziqli forma, bichiziqli va kvadratik forma)
9. Chiziqli qism fazolar yig'indisi, kesishmasi (qism fazolar o'lchami, to'g'ri yig'indi)
10. Matritsalarini transponerlash amali xossalari (sitr, ustun, simmetrik va antisimmetrik matritsalar)
11. Teskari matritsa. Aynigan va aynimgan matritsalar (teskari matritsaning bor bo'lish sharti, algebraik to'ltiruvchi, birlashtirilgan matritsa)
12. Shekli va sheksiz o'lchamli chiziqli fazolar. Bazis (chiziqli erksiz vektorlar, bazislarning bog'liqligi)
13. Invariant qism fazolar (chiziqli almashtirish, trivial invariant qism fazolar, invariant qism fazolar o'lchami)
14. Orin almashtirishlar ustida amallar (orin almashtirish, transpozitsiya, inversiya, toq va juft orin almashtirishlar)
15. Chiziqli almashtirishlar, misollar, xossalari (chiziqli almashtirish matritsasi, chiziqli almashtirish matritsalarini orasidagi bog'liqlilik)
16. Evklid fazo. Ortogonal va ortonormal bazislar (skaliyar ko'paytma, ta'ri, misollar, bazislar)
17. Inversiya qonuni (musbat, manfiy va nol koefitsientlar, musbat aniqlangan kvadratik forma, kvadratik forma rangi)
18. Determinant va uni hisoblash, xossalari (tartibini pasaytirib hisoblash, Laplas formulasi)
19. O'rin almashtirishlar (ta'rtiplangan ketma-ketlik, transpozitsiya, inversiya, juft va toq orin almashtirishlar)
20. n-o'lshamli fazo, bazislar. Bazislar orasidagi bog'liqlilik (chiziqli bog'likli vektorlar soni, bazislarni almashtirish matritsasi)
21. Bichiziqli va kvadratik formalar (chiziqli formalar ko'paytmasi, misollar, simmetrik bichiziqli forma)
22. Kroneker-Kapelli teoremasi (asosiy va kengaytirilgan matritsalar rangi, cheksiz ko'p echim, oniq birgalikta va oniqmos birgalikta)
23. Minor va algebraik to'ldiruvchilar (matritsa satrlari, ustini, Laplas teoremasi)

24. Chiziqli almashtirish (obrazi, proobrazi, nol, ayniy almashtirishlar, misollar va xossalari)
25. Evklid fazolar, orthogonal va ortonormal sistemalar (skaliyar ko'paytma, vector uzunligi va vektorlar orasidagi burchak, ortogonallashtirish va ortonormalashtirish)
26. Tenglamalar sistemasini echishning Kramer qoydasi (asosiy determinant, qoshimsha determinantlar, bitta echim, cheksiz ko'p echim)
27. Matritsa rangi (chiziqli bog'liksiz satrlar va ustunlar, minor va algebrik toltiruvchi, matritsalar u'stida elementar almashtirishlar)
28. Chiziqli fazolar (ta'rifi, misollar, aksiomalar, chiziqli fazilarning izomorfizmi)
29. Ikkinchi va uchinchi tartibli determinantlar (hisoblash usullari, uchburchak, sariuos usullari, xossalari)
30. Chiziqli tenglamalar sistemasin echishning Gauss usuli (bog'likli va erkli koeffisientlar, tug'ri va teskari yol)
31. Kroneker-Kapelli teopemasi (asosiy matritsa, kengaytirilgan matritsa ranglari, oniq birgalikta)
32.  $n$ -o'lshamli fazo, bazislar orasidagi bog'liklik (chiziqli bog'likli vektorlar, bazislarni almashtirish matritsasi)
33. O'rin almashtirishlar va o'rniga qo'yishlar (o'rin almashtirishlar soni, transpozitsiya, inversiya, aynan o'rniga qo'yish)
34. Kvadratik formani kanonik shaklga keltirish. Yakobi usuli (bosh minorlar, kanonik shakl koeffisientlari)
35. Teskari matritsa (teskari matritsaning bor bo'lish sharti, aynigan va aynimagan matritsa, birlashtirilgan matritsa)
36. Chiziqli akslantirish, turli bazislardagi matritsalar (o'tish matritsasi, simmetrik matritsa)
37. Ortogonal to'ldiruvchi, orthogonal proektsiya (ta'rifi, mavjudligi va yagonaligi)
38. Matritsalar u'stida amallar (qosish, ayirish, songa ko'paytirish xossalari)
39. Kramer qoydasi (asosiy va qoshimsha determinantlar, bitta echim, sheksiz ko'p echim)
40. Chiziqli qism fazo (chiziqli fazo, qism fazoning bor bolish sharti, qism fazolar u'stida amallar)
41. Determinant xossalari (sitr, u'stun, transponerlash, )
42. Evklid fazo (skaliyar ko'paytma, aksiomalar, vector uzunligi)
43. Chiziqli tenglamalar sistemasin matritsoviy usulda echish (asosiy matritsa, nomalumlar ustini, ozad koeffisientlar satri )
44. Xarakteristik ko'phad va xarakteristik ko'phad ildizi (xarakteristik kophad, karrali ildizlar) .
45. Chiziqli almashtirishning xos soni va xos vektori (invariant qism fazo, bir o'lchamli invariant qism fazo)
46. Matritsalarini ko'paytirish, transponerlash (ko'paytirish sharti, xossalari)
47. Kvadratik formani kanonik shaklga Lagranj usulida keltirish (bosh koeffisientlar, tola kvadrat, kvadratik forma rangi)

48.n-o'lshamli fazo, bazislar. Bazislar orasidagi bog'liklik (chiziqli bog'likli vektorlar soni, bazisda baziska o'tish matritsasi)

49.Kvadratliq formani kanonikaliq tu'rge keltiriv. Yakobi usuli (bas minorlar, diogonal elementler)

50.Chiziqli fazolar izomorfizmi. Izomorfizm (yig'indi, songa ko'paytirish obrazi)

51.Ikkinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 8 & -4 \\ 5 & 1 \end{vmatrix}$

52.Ikkinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 8 & -1 \\ 5 & -1 \end{vmatrix}$

53.Ikkinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 1 & -1 \\ 5 & 1 \end{vmatrix}$

54.Ikkinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 8 & -1 \\ 5 & 2 \end{vmatrix}$

55.Ikkinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 4 & 8 \\ 2 & 2 \end{vmatrix}$

56.Ikkinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 5 & 2 \\ 3 & -2 \end{vmatrix}$

57.Ikkinchi tartibli determinantni hisoblang:  $\begin{vmatrix} -4 & 8 \\ 2 & 2 \end{vmatrix}$

58.Ikkinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 4 & 8 \\ -2 & 2 \end{vmatrix}$

59.Ikkinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 4 & -6 \\ 2 & 2 \end{vmatrix}$

60.Ikkinchi tartibli determinantni hisoblang:  $\begin{vmatrix} -3 & -6 \\ 2 & 2 \end{vmatrix}$

61.Ikkinchi tartibli determinantni hisoblang:  $\begin{vmatrix} -3 & 4 \\ 2 & 5 \end{vmatrix}$

62.Ikkinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 3 & -6 \\ 5 & 7 \end{vmatrix}$

63.Ikkinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 2 & 6 \\ 8 & 1 \end{vmatrix}$

64.Ikkinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 3 & 7 \\ 4 & 9 \end{vmatrix}$

65. Ikkinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 3 & 7 \\ -4 & 2 \end{vmatrix}$

66. Uchinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 1 & 2 & 1 \\ 4 & 2 & 1 \\ 1 & 3 & 2 \end{vmatrix}$

67. Uchinchi tartibli determinantni hisoblang:  $\begin{vmatrix} -1 & 3 & 1 \\ 4 & 2 & 1 \\ 1 & 3 & 2 \end{vmatrix}$

68. Uchinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 1 & 3 & 1 \\ 4 & 2 & -1 \\ 1 & 3 & 2 \end{vmatrix}$

69. Uchinchi tartibli determinantni hisoblang:  $\begin{vmatrix} -3 & 2 & 1 \\ 4 & 2 & 1 \\ 1 & -2 & 2 \end{vmatrix}$

70. Uchinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 3 & 2 & 1 \\ -1 & 3 & 1 \\ 1 & -2 & 2 \end{vmatrix}$

71. Uchinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 4 & 2 & 3 \\ -2 & 3 & 1 \\ 1 & -2 & 2 \end{vmatrix}$

72. Uchinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 7 & 2 & 3 \\ -2 & 3 & 1 \\ 1 & -2 & 0 \end{vmatrix}$

73. Uchinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 7 & 2 & 3 \\ 3 & -2 & 1 \\ 1 & -2 & 0 \end{vmatrix}$

74. Uchinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 4 & 5 & 3 \\ 1 & 0 & 1 \\ 1 & -2 & 0 \end{vmatrix}$

75. Uchinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 4 & 0 & 3 \\ -1 & 4 & 1 \\ 1 & -2 & 0 \end{vmatrix}$

76. Uchinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 0 & 2 & 3 \\ -1 & 4 & 1 \\ 1 & -2 & 4 \end{vmatrix}$

77. Uchinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 1 & 2 & 0 \\ 4 & 4 & 1 \\ 1 & -2 & 4 \end{vmatrix}$

78. Uchinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 1 & -3 & 0 \\ 5 & -1 & 1 \\ 1 & -2 & 4 \end{vmatrix}$

79. Uchinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 0 & -3 & 0 \\ 5 & 5 & 1 \\ 1 & -2 & 4 \end{vmatrix}$

80. Uchinchi tartibli determinantni hisoblang:  $\begin{vmatrix} 0 & -3 & 1 \\ 5 & 2 & 3 \\ 1 & 5 & 4 \end{vmatrix}$

81. Uchinchi tartibli  $\begin{vmatrix} 0 & -3 & 1 \\ 5 & 2 & 3 \\ 1 & 5 & 4 \end{vmatrix}$  determinantning  $a_{11}$  elementining algebraik

to'ldiruvchisini toping

82. Uchinchi tartibli  $\begin{vmatrix} 0 & -3 & 1 \\ 5 & 2 & 3 \\ 1 & 5 & 4 \end{vmatrix}$  determinantning  $a_{12}$  elementining algebraik

to'ldiruvchisini toping

83. Uchinchi tartibli  $\begin{vmatrix} 0 & -3 & 1 \\ 5 & 2 & 3 \\ 1 & 5 & 4 \end{vmatrix}$  determinantning  $a_{13}$  elementining algebraik

to'ldiruvchisini toping

84. Uchinchi tartibli  $\begin{vmatrix} 0 & -3 & 1 \\ 5 & 2 & 3 \\ 1 & 5 & 4 \end{vmatrix}$  determinantning  $a_{21}$  elementining algebraik

to'ldiruvchisini toping

85. Uchinchi tartibli  $\begin{vmatrix} 0 & -3 & 1 \\ 5 & 2 & 3 \\ 1 & 5 & 4 \end{vmatrix}$  determinantning  $a_{22}$  elementining algebraik

to'ldiruvchisini toping

86.Uchinchi tartibli	$\begin{vmatrix} 0 & -3 & 1 \\ 5 & 2 & 3 \\ 1 & 5 & 4 \end{vmatrix}$	determinantning	$a_{23}$	elementining	algebraik
to'ldiruwchisini toping					
87.Uchinchi tartibli	$\begin{vmatrix} 0 & -3 & 1 \\ 5 & 2 & 3 \\ 1 & 5 & 4 \end{vmatrix}$	determinantning	$a_{31}$	elementining	algebraik
to'ldiruwchisini toping					
88.Uchinchi tartibli	$\begin{vmatrix} 0 & -3 & 1 \\ 5 & 2 & 3 \\ 1 & 5 & 4 \end{vmatrix}$	determinantning	$a_{32}$	elementining	algebraik
to'ldiruwchisini toping					
89.Uchinchi tartibli	$\begin{vmatrix} 0 & -3 & 1 \\ 5 & 2 & 3 \\ 1 & 5 & 4 \end{vmatrix}$	determinantning	$a_{33}$	elementining	algebraik
to'ldiruwchisini toping					
90.Uchinchi tartibli	$\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$	determinantning	$a_{12}$	elementining	algebraik
to'ldiruwchisini toping					
91.Uchinchi tartibli	$\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$	determinantning	$a_{21}$	elementining	algebraik
to'ldiruwchisini toping					
92.Uchinchi tartibli	$\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$	determinantning	$a_{32}$	elementining	algebraik
to'ldiruwchisini toping					
93.Uchinchi tartibli	$\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$	determinantning	$a_{33}$	elementining	algebraik
to'ldiruwchisini toping					
94.Uchinchi tartibli	$\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$	determinantning	$a_{13}$	elementining	algebraik
to'ldiruwchisini toping					

95. Uchinchi tartibli  $\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$  determinantning  $a_{23}$  elementining algebraik

to'ldiruvchisini toping

96. Uchinchi tartibli  $\begin{vmatrix} 5 & 3 & 0 \\ 2 & -4 & 3 \\ 2 & 3 & 6 \end{vmatrix}$  determinantning  $a_{11}$  va  $a_{12}$  elementlarining algebraik

to'ldiruvchilarining ko'paytmasini toping

97. Uchinchi tartibli  $\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$  determinantning  $a_{11}$  va  $a_{13}$  elementlarining algebraik

to'ldiruvchilarining ko'paytmasini toping

98. Uchinchi tartibli  $\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$  determinantning  $a_{11}$  va  $a_{21}$  elementlarining algebraik

to'ldiruvchilarining ko'paytmasini toping

99. Uchinchi tartibli  $\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$  determinantning  $a_{11}$  va  $a_{22}$  elementlarining algebraik

to'ldiruvchilarining ko'paytmasini toping

100. Uchinchi tartibli  $\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$  determinantning  $a_{11}$  va  $a_{23}$  elementlarining algebraik

to'ldiruvchilarining ko'paytmasini toping

101. Uchinchi tartibli  $\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$  determinantning  $a_{11}$  va  $a_{31}$  elementlarining algebraik

to'ldiruvchilarining ko'paytmasini toping

102. Uchinchi tartibli  $\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$  determinantning  $a_{11}$  va  $a_{32}$  elementlarining algebraik

to'ldiruvchilarining ko'paytmasini toping

103. Uchinchi tartibli  $\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$  determinantning  $a_{11}$  va  $a_{33}$  elementlarining algebraik

to'ldiruvchilarining ko'paytmasini toping

104. Uchinchi tartibli  $\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$  determinantning  $a_{12}$  va  $a_{13}$  elementlarining algebraik

to'ldiruvchilarining ko'paytmasini toping

105. Uchinchi tartibli  $\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$  determinantning  $a_{12}$  va  $a_{21}$  elementlarining algebraik

to'ldiruvchilarining ko'paytmasini toping

106. Uchinchi tartibli  $\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$  determinantning  $a_{12}$  va  $a_{22}$  elementlarining algebraik

to'ldiruvchilarining ko'paytmasini toping

107. Uchinchi tartibli  $\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$  determinantning  $a_{12}$  va  $a_{23}$  elementlarining algebraik

to'ldiruvchilarining ko'paytmasini toping

108. Uchinchi tartibli  $\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$  determinantning  $a_{12}$  va  $a_{31}$  elementlarining algebraik

to'ldiruvchilarining ko'paytmasini toping

109. Uchinchi tartibli  $\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$  determinantning  $a_{12}$  va  $a_{32}$  elementlarining algebraik

to'ldiruvchilarining ko'paytmasini toping

110. Uchinchi tartibli  $\begin{vmatrix} 4 & 2 & 1 \\ 0 & 1 & 3 \\ 1 & 3 & 6 \end{vmatrix}$  determinantning  $a_{12}$  va  $a_{33}$  elementlarining algebraik

to'ldiruvchilarining ko'paytmasini toping

111. Matritsa rangini toping:  $B = \begin{pmatrix} 3 & -2 & 1 \\ 0 & 1 & 2 \\ 1 & 4 & 5 \end{pmatrix}$

112. Matritsa rangini toping:  $B = \begin{pmatrix} 3 & 1 & 1 \\ 0 & -3 & 2 \\ 1 & 4 & 5 \end{pmatrix}$



113. Matritsa rangini toping:  $B = \begin{pmatrix} 1 & 1 & -2 \\ 0 & 0 & 2 \\ 1 & 4 & 5 \end{pmatrix}$

114. Matritsa rangini toping:  $B = \begin{pmatrix} 1 & 1 & -2 \\ 0 & 0 & 2 \\ 5 & 5 & -10 \end{pmatrix}$

115. Matritsa rangini toping:  $B = \begin{pmatrix} 1 & 1 & -2 \\ 0 & 3 & 2 \\ 1 & 4 & 5 \end{pmatrix}$

116. Matritsa rangini toping:  $B = \begin{pmatrix} 1 & 1 & -2 \\ 0 & 3 & 0 \\ 1 & 4 & -2 \end{pmatrix}$

117. Matritsa rangini toping:  $B = \begin{pmatrix} 1 & 1 & -2 \\ 2 & 5 & -4 \\ 1 & 4 & -2 \end{pmatrix}$

118. Matritsa rangini toping:  $B = \begin{pmatrix} 1 & 1 & -2 \\ 2 & 5 & -4 \\ 3 & 9 & -6 \end{pmatrix}$

119. Matritsa rangini toping:  $B = \begin{pmatrix} 1 & 0 & -2 \\ 2 & -1 & -4 \\ 3 & 3 & -6 \end{pmatrix}$

120. Matritsa rangini toping:  $B = \begin{pmatrix} 2 & 5 & -2 \\ 4 & -1 & -4 \\ 6 & -7 & -6 \end{pmatrix}$

121. Matritsa rangini toping:  $B = \begin{pmatrix} 2 & 5 & 3 \\ 4 & -1 & -5 \\ 6 & -7 & -13 \end{pmatrix}$

122. Matritsa rangini toping:  $B = \begin{pmatrix} 7 & 5 & 3 \\ 3 & -1 & -5 \\ -1 & -7 & -13 \end{pmatrix}$

123. Matritsa rangini toping:  $B = \begin{pmatrix} 7 & 5 & 3 \\ 10 & 4 & -2 \\ -1 & -7 & -13 \end{pmatrix}$

124. Matritsa rangini toping:  $B = \begin{pmatrix} 1 & 3 & 5 \\ 2 & 0 & 3 \\ 3 & 1 & 4 \end{pmatrix}$

125. Matritsa rangini toping:  $B = \begin{pmatrix} 6 & 3 & 5 \\ 5 & 0 & 3 \\ 7 & 1 & 4 \end{pmatrix}$

126. Ikkinchi tartibli  $A = \begin{pmatrix} 5 & 2 \\ 1 & 3 \end{pmatrix}$  va  $B = \begin{pmatrix} 2 & 3 \\ 1 & 0 \end{pmatrix}$  matritsalarining  $AB$  va  $BA$

ko'paytmalarini toping

127. Ikkinchi tartibli  $A = \begin{pmatrix} 0 & 2 \\ 1 & 3 \end{pmatrix}$  va  $B = \begin{pmatrix} 2 & 3 \\ 1 & 4 \end{pmatrix}$  matritsalarining  $AB$  va  $BA$

ko'paytmalarini toping

128. Ikkinchi tartibli  $A = \begin{pmatrix} 5 & 2 \\ 4 & 3 \end{pmatrix}$  va  $B = \begin{pmatrix} 2 & 3 \\ 1 & 5 \end{pmatrix}$  matritsalarining  $AB$  va  $BA$

ko'paytmalarini toping

129. Ikkinchi tartibli  $A = \begin{pmatrix} 1 & 2 \\ 4 & 3 \end{pmatrix}$  va  $B = \begin{pmatrix} 2 & 3 \\ 4 & 5 \end{pmatrix}$  matritsalarining  $AB$  va  $BA$

ko'paytmalarini toping

130. Ikkinchi tartibli  $A = \begin{pmatrix} 3 & 2 \\ 4 & 3 \end{pmatrix}$  va  $B = \begin{pmatrix} 2 & 3 \\ 1 & 2 \end{pmatrix}$  matritsalarining  $AB$  va  $BA$

ko'paytmalarini toping

131. Ikkinchi tartibli  $A = \begin{pmatrix} 4 & 2 \\ 1 & 3 \end{pmatrix}$  matritsasiga teskari matritsani toping

132. Ikkinchi tartibli  $A = \begin{pmatrix} 4 & 2 \\ -1 & -3 \end{pmatrix}$  matritsasiga teskari matritsani toping

133. Ikkinchi tartibli  $A = \begin{pmatrix} 4 & -2 \\ 1 & 3 \end{pmatrix}$  matritsasiga teskari matritsani toping

134. Ikkinchi tartibli  $A = \begin{pmatrix} 4 & 2 \\ -1 & -3 \end{pmatrix}$  matritsasiga teskari matritsani toping

135. Ikkinchi tartibli  $A = \begin{pmatrix} 2 & 2 \\ 1 & 2 \end{pmatrix}$  matritsasiga teskari matritsani toping

136. Ikkinchi tartibli  $A = \begin{pmatrix} 1 & 2 \\ 1 & 3 \end{pmatrix}$  matritsasiga teskari matritsani toping

137. Ikkinchi tartibli  $A = \begin{pmatrix} 2 & 2 \\ 3 & 4 \end{pmatrix}$  matritsasiga teskari matritsani toping

138. Ikkinchi tartibli  $A = \begin{pmatrix} 2 & 1 \\ 3 & 2 \end{pmatrix}$  matritsasiga teskari matritsani toping
139. Ikkinchi tartibli  $A = \begin{pmatrix} 3 & 2 \\ 5 & 3 \end{pmatrix}$  matritsasiga teskari matritsani toping
140. Ikkinchi tartibli  $A = \begin{pmatrix} 4 & 1 \\ 7 & 2 \end{pmatrix}$  matritsasiga teskari matritsani toping
141. Ikkinchi tartibli  $A = \begin{pmatrix} 3 & 3 \\ 2 & 5 \end{pmatrix}$  matritsasiga teskari matritsani toping
142. Ikkinchi tartibli  $A = \begin{pmatrix} 3 & 4 \\ 2 & 5 \end{pmatrix}$  matritsasiga teskari matritsani toping
143. Ikkinchi tartibli  $A = \begin{pmatrix} 4 & -2 \\ 3 & 2 \end{pmatrix}$  matritsasiga teskari matritsani toping
144. Ikkinchi tartibli  $A = \begin{pmatrix} 5 & 2 \\ -2 & 3 \end{pmatrix}$  matritsasiga teskari matritsani toping
145. Ikkinchi tartibli  $A = \begin{pmatrix} 3 & 0 \\ 0 & 3 \end{pmatrix}$  matritsasiga teskari matritsani toping
146. Uchinchi tartibli  $A = \begin{pmatrix} -1 & 2 & 7 \\ 1 & 0 & 2 \\ 4 & 5 & 2 \end{pmatrix}$  matritsasiga teskari matritsani toping
147. Uchinchi tartibli  $A = \begin{pmatrix} 3 & 0 & 4 \\ 1 & 2 & 2 \\ 2 & 5 & 2 \end{pmatrix}$  matritsasiga teskari matritsani toping
148. Uchinchi tartibli  $A = \begin{pmatrix} 4 & -2 & 4 \\ -3 & 2 & 2 \\ 3 & 5 & 2 \end{pmatrix}$  matritsasiga teskari matritsani toping
149. Uchinchi tartibli  $A = \begin{pmatrix} 2 & 3 & 0 \\ -3 & 2 & -1 \\ 2 & 5 & 2 \end{pmatrix}$  matritsasiga teskari matritsani toping
150. Uchinchi tartibli  $A = \begin{pmatrix} -1 & 2 & 1 \\ -2 & 1 & -5 \\ 2 & 5 & 2 \end{pmatrix}$  matritsasiga teskari matritsani toping
151. Uchinchi tartibli  $A = \begin{pmatrix} 2 & 3 & 1 \\ 0 & 1 & -5 \\ 2 & 7 & 2 \end{pmatrix}$  matritsasiga teskari matritsani toping

152. Uchinchi tartibli  $A = \begin{pmatrix} 6 & 3 & -1 \\ 2 & 1 & -3 \\ -1 & 7 & 2 \end{pmatrix}$  matritsasiga teskari matritsani toping

153. Uchinchi tartibli  $A = \begin{pmatrix} -1 & 0 & -1 \\ 2 & 5 & -3 \\ -1 & 3 & 2 \end{pmatrix}$  matritsasiga teskari matritsani toping

154. Uchinchi tartibli  $A = \begin{pmatrix} -5 & 2 & 3 \\ 2 & 1 & -3 \\ -1 & 0 & 2 \end{pmatrix}$  matritsasiga teskari matritsani toping

155. Uchinchi tartibli  $A = \begin{pmatrix} 2 & -1 & 7 \\ 1 & 1 & -3 \\ -1 & 3 & 2 \end{pmatrix}$  matritsasiga teskari matritsani toping

156. Uchinchi tartibli  $A = \begin{pmatrix} 3 & -1 & 4 \\ 2 & 1 & -1 \\ -1 & 3 & 0 \end{pmatrix}$  matritsasiga teskari matritsani toping

157. Uchinchi tartibli  $A = \begin{pmatrix} -1 & 0 & 4 \\ 2 & 5 & -1 \\ -1 & 3 & 2 \end{pmatrix}$  matritsasiga teskari matritsani toping

158. Uchinchi tartibli  $A = \begin{pmatrix} 3 & 2 & -1 \\ -1 & 3 & 1 \\ 0 & 3 & 2 \end{pmatrix}$  matritsasiga teskari matritsani toping

159. Uchinchi tartibli  $A = \begin{pmatrix} 4 & 2 & 4 \\ 2 & 3 & 1 \\ -3 & 3 & 2 \end{pmatrix}$  matritsasiga teskari matritsani toping

160. Uchinchi tartibli  $A = \begin{pmatrix} 0 & 2 & -4 \\ 2 & -1 & 1 \\ -3 & 2 & 2 \end{pmatrix}$  matritsasiga teskari matritsani toping

161.  $A = \begin{pmatrix} 1 & 5 & -2 \\ -1 & 4 & 1 \end{pmatrix}$  va  $B = \begin{pmatrix} -4 & 2 \\ 1 & 3 \\ 0 & 2 \end{pmatrix}$  matritsalar ko'paytmasining elementlaridan

tuzilgan determinantning qiymatini toping

162.  $A = \begin{pmatrix} 1 & 2 & -2 \\ -1 & 4 & 1 \end{pmatrix}$  va  $B = \begin{pmatrix} -1 & 2 \\ 1 & 3 \\ 0 & 2 \end{pmatrix}$  matritsalar ko'paytmasining elementlaridan

tuzilgan determinantning qiymatini toping

163.  $A = \begin{pmatrix} 1 & 2 & -1 \\ -1 & 4 & 1 \end{pmatrix}$  va  $B = \begin{pmatrix} -1 & 2 \\ 1 & 3 \\ 0 & 2 \end{pmatrix}$  matritsalar ko'paytmasining elementlaridan

tuzilgan determinantning qiymatini toping

164.  $A = \begin{pmatrix} 2 & 1 & -1 \\ -1 & 4 & 1 \end{pmatrix}$  va  $B = \begin{pmatrix} -1 & 2 \\ 1 & 3 \\ 0 & 2 \end{pmatrix}$  matritsalar ko'paytmasining elementlaridan

tuzilgan determinantning qiymatini toping

165.  $A = \begin{pmatrix} 3 & 1 & -1 \\ -1 & 4 & 1 \end{pmatrix}$  va  $B = \begin{pmatrix} -1 & 2 \\ 1 & 3 \\ 0 & 2 \end{pmatrix}$  matritsalar ko'paytmasining elementlaridan

tuzilgan determinantning qiymatini toping

166.  $A = \begin{pmatrix} 0 & 1 & -3 \\ -1 & 0 & 1 \end{pmatrix}$  va  $B = \begin{pmatrix} -1 & 2 \\ 1 & 3 \\ 0 & 2 \end{pmatrix}$  matritsalar ko'paytmasining elementlaridan

tuzilgan determinantning qiymatini toping

167.  $A = \begin{pmatrix} 2 & 0 & -4 \\ -1 & 4 & 0 \end{pmatrix}$  va  $B = \begin{pmatrix} -1 & 2 \\ 1 & 3 \\ 0 & 2 \end{pmatrix}$  matritsalar ko'paytmasining elementlaridan

tuzilgan determinantning qiymatini toping

168.  $A = \begin{pmatrix} -1 & 1 & -3 \\ 0 & 4 & 2 \end{pmatrix}$  va  $B = \begin{pmatrix} -1 & 2 \\ 1 & 3 \\ 0 & 2 \end{pmatrix}$  matritsalar ko'paytmasining elementlaridan

tuzilgan determinantning qiymatini toping

169.  $A = \begin{pmatrix} 2 & 2 & -1 \\ -1 & 1 & 0 \end{pmatrix}$  va  $B = \begin{pmatrix} -1 & 2 \\ 1 & 3 \\ 0 & 2 \end{pmatrix}$  matritsalar ko'paytmasining elementlaridan

tuzilgan determinantning qiymatini toping

170.  $A = \begin{pmatrix} 1 & 2 & -3 \\ -2 & 1 & 0 \end{pmatrix}$  va  $B = \begin{pmatrix} -1 & 2 \\ 1 & 3 \\ 0 & 2 \end{pmatrix}$  matritsalar ko'paytmasining elementlaridan

tuzilgan determinantning qiymatini toping

171.  $A = \begin{pmatrix} 3 & 2 & -1 \\ -1 & 2 & 3 \end{pmatrix}$  va  $B = \begin{pmatrix} -1 & 2 \\ 1 & 3 \\ 0 & 2 \end{pmatrix}$  matritsalar ko'paytmasining elementlaridan

tuzilgan determinantning qiymatini toping

172.  $A = \begin{pmatrix} 4 & 3 & -2 \\ -2 & 3 & 0 \end{pmatrix}$  va  $B = \begin{pmatrix} -1 & 2 \\ 1 & 3 \\ 0 & 2 \end{pmatrix}$  matritsalar ko'paytmasining elementlaridan

tuzilgan determinantning qiymatini toping

173.  $A = \begin{pmatrix} 4 & -3 & 2 \\ 2 & -3 & 0 \end{pmatrix}$  va  $B = \begin{pmatrix} -1 & 2 \\ 1 & 3 \\ 0 & 2 \end{pmatrix}$  matritsalar ko'paytmasining elementlaridan

tuzilgan determinantning qiymatini toping

174.  $A = \begin{pmatrix} 1 & 2 & -3 \\ 2 & 1 & 0 \end{pmatrix}$  va  $B = \begin{pmatrix} -1 & 2 \\ 1 & 3 \\ 0 & 2 \end{pmatrix}$  matritsalar ko'paytmasining elementlaridan

tuzilgan determinantning qiymatini toping

175.  $A = \begin{pmatrix} 0 & 1 & -3 \\ -1 & 4 & 2 \end{pmatrix}$  va  $B = \begin{pmatrix} -1 & 2 \\ 1 & 3 \\ 0 & 2 \end{pmatrix}$  matritsalar ko'paytmasining elementlaridan

tuzilgan determinantning qiymatini toping

176. Agar  $x_0, y_0$  va  $z_0$  lar  $\begin{cases} 3x + 3y + z = 3 \\ 2x + 3y + z = 1 \\ 2x + y + 3z = 11 \end{cases}$  tenglamalar sistemasining yechimi bo'lsa, u

holda  $x_0 + y_0 + z_0$  ning qiymatini toping

177. Agar  $x_0, y_0$  va  $z_0$  lar  $\begin{cases} x + 2y - z = 2 \\ 3x + 2y - 2z = 3 \\ 2x + 3y - 3z = 2 \end{cases}$  tenglamalar sistemasining yechimi bo'lsa, u

holda  $x_0 + y_0 + z_0$  ning qiymatini toping

178. Agar  $x_0, y_0$  va  $z_0$  lar  $\begin{cases} x + 2y + z = 8 \\ 3x + y - z = 2 \\ x - 2y + 2z = 3 \end{cases}$  tenglamalar sistemasining yechimi bo'lsa, u

holda  $x_0 + y_0 + z_0$  ning qiymatini toping

179. Agar  $x_0, y_0$  va  $z_0$  lar  $\begin{cases} 3x - 2y + z = 2 \\ 2x - 3y - z = -2 \\ x - y + 3z = 3 \end{cases}$  tenglamalar sistemasining yechimi bo'lsa,

u holda  $x_0 + y_0 + z_0$  ning qiymatini toping

180. Agar  $x_0, y_0$  va  $z_0$  lar  $\begin{cases} x - 2y + 2z = 2 \\ -2x + 3y + z = 4 \\ x - y + 3z = 6 \end{cases}$  tenglamalar sistemasining yechimi bo'lsa,

u holda  $x_0 + y_0 + z_0$  ning qiymatini toping

181. Agar  $x_0, y_0$  va  $z_0$  lar  $\begin{cases} -3x - 2y + z = 6 \\ 2x - 3y - z = 0 \\ x - 3y + 3z = 5 \end{cases}$  tenglamalar sistemasining yechimi bo'lsa,

u holda  $x_0 + y_0 + z_0$  ning qiymatini toping

182. Agar  $x_0, y_0$  va  $z_0$  lar  $\begin{cases} x - 2y + z = 0 \\ x - 3y + 2z = 0 \\ x + 4y + 2z = -7 \end{cases}$  tenglamalar sistemasining yechimi bo'lsa,

u holda  $x_0 + y_0 + z_0$  ning qiymatini toping

183. Agar  $x_0, y_0$  va  $z_0$  lar  $\begin{cases} x - 2y - 3z = -7 \\ 2x - 3y + 2z = 3 \\ 2x - y + 4z = 9 \end{cases}$  tenglamalar sistemasining yechimi bo'lsa,

u holda  $x_0 + y_0 + z_0$  ning qiymatini toping

184. Agar  $x_0, y_0$  va  $z_0$  lar  $\begin{cases} 2x - 2y - z = 3 \\ x + 3y - z = 2 \\ 3x + 2y + 3z = 0 \end{cases}$  tenglamalar sistemasining yechimi bo'lsa, u

holda  $x_0 + y_0 + z_0$  ning qiymatini toping

185. Agar  $x_0, y_0$  va  $z_0$  lar  $\begin{cases} 5x + 2y - 3z = 6 \\ x + 3y + 2z = -4 \\ 2x - y + 3z = 0 \end{cases}$  tenglamalar sistemasining yechimi bo'lsa,

u holda  $x_0 + y_0 + z_0$  ning qiymatini toping

186. Agar  $x_0, y_0$  va  $z_0$  lar  $\begin{cases} x - 2y - 2z = -5 \\ 2x - 4y - 3z = -9 \\ 2x + 3y + 3z = 11 \end{cases}$  tenglamalar sistemasining yechimi bo'lsa,

u holda  $x_0 + y_0 + z_0$  ning qiymatini toping

187. Agar  $x_0, y_0$  va  $z_0$  lar  $\begin{cases} x + 2y - 3z = 2 \\ 2x + 4y + 3z = 13 \\ x + y - 5z = -2 \end{cases}$  tenglamalar sistemasining yechimi bo'lsa,

u holda  $x_0 + y_0 + z_0$  ning qiymatini toping

188. Agar  $x_0, y_0$  va  $z_0$  lar  $\begin{cases} -x + 2y + 4z = 1 \\ 3x - 4y - 3z = 2 \\ 7x - 3y + 3z = 2 \end{cases}$  tenglamalar sistemasining yechimi bo'lsa, u

holda  $x_0 + y_0 + z_0$  ning qiymatini toping

189. Agar  $x_0, y_0$  va  $z_0$  lar  $\begin{cases} 2x + 5y - 7z = 2 \\ x - 4y + 3z = 1 \\ 5x - 3y + z = -1 \end{cases}$  tenglamalar sistemasining yechimi bo'lsa,

u holda  $x_0 + y_0 + z_0$  ning qiymatini toping

190. Agar  $x_0, y_0$  va  $z_0$  lar  $\begin{cases} x + 2y - 3z = -1 \\ 2x + 3y - 7z = 2 \\ 3x + 5y - 11z = 3 \end{cases}$  tenglamalar sistemasining yechimi bo'lsa,

u holda  $x_0 + y_0 + z_0$  ning qiymatini toping

191.  $\begin{cases} 3x + 3y + z = 3 \\ 2x + 3y + z = 1 \\ 2x + y + 3z = 11 \end{cases}$  tenglamalar sistemasini Kramer usulida yechishdagi  $\Delta x$  ning

qiymatini toping

192.  $\begin{cases} x + 2y - z = 2 \\ 3x + 2y - 2z = 3 \\ 2x + 3y - 3z = 2 \end{cases}$  tenglamalar sistemasini Kramer usulida yechishdagi  $\Delta x$  ning

qiymatini toping

193.  $\begin{cases} x + 2y + z = 8 \\ 3x + y - z = 2 \\ x - 2y + 2z = 3 \end{cases}$  tenglamalar sistemasini Kramer usulida yechishdagi  $\Delta x$  ning

qiymatini toping

194.  $\begin{cases} 3x - 2y + z = 2 \\ 2x - 3y - z = -2 \\ x - y + 3z = 3 \end{cases}$  tenglamalar sistemasini Kramer usulida yechishdagi  $\Delta x$  ning

qiymatini toping

195.  $\begin{cases} x - 2y + 2z = 2 \\ -2x + 3y + z = 4 \\ x - y + 3z = 6 \end{cases}$  tenglamalar sistemasini Kramer usulida yechishdagi  $\Delta x$  ning

qiymatini toping

196.  $\begin{cases} -3x - 2y + z = 6 \\ 2x - 3y - z = 0 \\ x - 3y + 3z = 5 \end{cases}$  tenglamalar sistemasini Kramer usulida yechishdagi  $\Delta x$  ning

qiymatini toping

197.  $\begin{cases} x - 2y + z = 0 \\ x - 3y + 2z = 0 \\ x + 4y + 2z = -7 \end{cases}$  tenglamalar sistemasini Kramer usulida yechishdagi  $\Delta x$  ning

qiymatini toping



$$198. \begin{cases} x - 2y - 3z = -7 \\ 2x - 3y + 2z = 3 \\ 2x - y + 4z = 9 \end{cases} \text{ tenglamalar sistemasini Kramer usulida yechishdagi } \Delta x \text{ ning}$$

qiymatini toping

$$199. \begin{cases} 2x - 2y - z = 3 \\ x + 3y - z = 2 \\ 3x + 2y + 3z = 0 \end{cases} \text{ tenglamalar sistemasini Kramer usulida yechishdagi } \Delta x \text{ ning}$$

qiymatini toping

$$200. \begin{cases} 5x + 2y - 3z = 6 \\ x + 3y + 2z = -4 \\ 2x - y + 3z = 0 \end{cases} \text{ tenglamalar sistemasini Kramer usulida yechishdagi } \Delta x \text{ ning}$$

qiymatini toping

$$201. \begin{cases} x - 2y - 2z = -5 \\ 2x - 4y - 3z = -9 \\ 2x + 3y + 3z = 11 \end{cases} \text{ tenglamalar sistemasini Kramer usulida yechishdagi } \Delta x \text{ ning}$$

qiymatini toping

$$202. \begin{cases} x + 2y - 3z = 2 \\ 2x + 4y + 3z = 13 \\ x + y - 5z = -2 \end{cases} \text{ tenglamalar sistemasini Kramer usulida yechishdagi } \Delta x \text{ ning}$$

qiymatini toping

$$203. \begin{cases} -x + 2y + 4z = 1 \\ 3x - 4y - 3z = 2 \\ 7x - 3y + 3z = 2 \end{cases} \text{ tenglamalar sistemasini Kramer usulida yechishdagi } \Delta x \text{ ning}$$

qiymatini toping

$$204. \begin{cases} 2x + 5y - 7z = 2 \\ x - 4y + 3z = 1 \\ 5x - 3y + z = -1 \end{cases} \text{ tenglamalar sistemasini Kramer usulida yechishdagi } \Delta x \text{ ning}$$

qiymatini toping

$$205. \begin{cases} x + 2y - 3z = -1 \\ 2x + 3y - 7z = 2 \\ 3x + 5y - 11z = 3 \end{cases} \text{ tenglamalar sistemasini Kramer usulida yechishdagi } \Delta x \text{ ning}$$

qiymatini toping