№5110300-Tasviriy san’at va muxandislik grafikasi yo’nalishining 1-2-SEMESTR UCHUN matematikadan testlar

№1 Fan bobi -1; Fan bo’limi-3; Qiyinchilik darajasi-2

CHTS yechimlari yig’indisini toping. $\begin{cases} -2x_1 + 5x_2 = -3 \\ -x_1 - 2x_2 = 3 \end{cases}$
-2
1
0
3

№2 Fan bobi -1; Fan bo’limi-3; Qiyinchilik darajasi-3

CHTS yechimlari yig’indisini toping. $\begin{cases} x_1 + 2x_2 - 2x_3 = 6 \\ -2x_1 - x_2 + x_3 = -3 \\ 3x_1 - 3x_2 - x_3 = -1 \end{cases}$
-1
1
0
3

№3 Fan bobi -1; Fan bo’limi-3; Qiyinchilik darajasi-2

CHTS yechimlari yig’indisini toping. $\begin{cases} -2x_1 + x_2 = 5 \\ -4x_1 + 3x_2 = 11 \end{cases}$
-1
2
0
3

№4 Fan bobi -1; Fan bo’limi-3; Qiyinchilik darajasi-2

CHTS yechimlari yig’indisini toping. $\begin{cases} 2x_1 + 3x_2 = 1 \\ 3x_1 - 2x_2 = 8 \end{cases}$
1
7
3
2

№5 Fan bobi -1; Fan bo’limi-3; Qiyinchilik darajasi-2

CHTS yechimlari yig’indisini toping. $\begin{cases} 3x_1 + 2x_2 = 7 \\ 4x_1 - 5x_2 = 40 \end{cases}$
1
4
3
2

№6 Fan bobi -1; Fan bo’limi-4; Qiyinchilik darajasi-3

Matrisalarni ko’paytiring: $\begin{pmatrix} 2 & 1 \\ 3 & 2 \end{pmatrix} \begin{pmatrix} 1 & -1 \\ 1 & 1 \end{pmatrix}$
$\begin{pmatrix} 3 & -1 \\ 5 & -1 \end{pmatrix}$
$\begin{pmatrix} 3 & -1 \\ 5 & 3 \end{pmatrix}$
$\begin{pmatrix} -2 & -1 \\ -5 & 4 \end{pmatrix}$
$\begin{pmatrix} 3 & -1 \\ 1 & 0 \end{pmatrix}$

№7 Fan bobi -1; Fan bo’limi-4; Qiyinchilik darajasi-2

Matrisalarni ko’paytiring: $\begin{pmatrix} 1 & 2 & 0 \\ -1 & 1 & 6 \end{pmatrix}\begin{pmatrix} 2 \\ 4 \\ 1 \end{pmatrix}$
$\begin{pmatrix} 10 \\ 8 \end{pmatrix}$
$\begin{pmatrix} 3 & -1 \\ 5 & 3 \end{pmatrix}$
$\begin{pmatrix} -2 & -1 \end{pmatrix}$
$\begin{pmatrix} 3 \\ 8 \end{pmatrix}$

№8 Fan bobi -1; Fan bo’limi-4; Qiyinchilik darajasi-3

Matrisalarni ko’paytiring: $\begin{pmatrix} 3 & -1 \\ -5 & -2 \end{pmatrix}\ \begin{pmatrix} -2 & -1 \\ -5 & 4 \end{pmatrix}$
$\begin{pmatrix} -1 & -7 \\ 20 & -3 \end{pmatrix}$
$\begin{pmatrix} 1 & -1 \\ 20 & 3 \end{pmatrix}$
$\begin{pmatrix} -2 & -7 \\ -5 & -3 \end{pmatrix}$
$\begin{pmatrix} 1 & -1 \\ -1 & -7 \end{pmatrix}$

№9 Fan bobi -1; Fan bo’limi-4; Qiyinchilik darajasi-2

Determinantni hisoblang $\begin{vmatrix} -2 & 1 & 0 \\ -1 & 0 & 1 \\ 0 & 2 & 1 \end{vmatrix}$
5
13

8
12

№10 Fan bobi -1; Fan bo’limi-4; Qiyinchilik darajasi-2

Determinantni hisoblang	$\begin{vmatrix} 0 & 1 & 1 \\ 1 & 0 & 1 \\ 1 & 1 & 0 \end{vmatrix}$
-2	
2	
0	
1	

№11 Fan bobi -1; Fan bo’limi-5; Qiyinchilik darajasi-2

Determinantni hisoblang	$\begin{vmatrix} 0 & 1 & 1 \\ 1 & 0 & 1 \\ 1 & 1 & 0 \end{vmatrix}$
1	
7	
3	
2	

№12 Fan bobi -1; Fan bo’limi-5; Qiyinchilik darajasi-2

Determinantni hisoblang	$\begin{vmatrix} 0 & 1 & 1 \\ 1 & 0 & 1 \\ 1 & 1 & 0 \end{vmatrix}$
1	
7	
3	

2

№13 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

$\vec{a}(1,5),\ \vec{b}(3,-1), \vec{c}(0,1)$ vektorlar berilgan. α ning qanday qiymatida $\vec{P} = \vec{a} + \alpha\vec{b}$ va $\vec{q} = \vec{a} - \vec{c}$ vektorlar kollinear bo'ladi.
$\alpha = \frac{1}{13}$
$\alpha = -\frac{2}{3}$
$\alpha = 3$
$\alpha = \frac{1}{4}$

№14 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-3

Tekislikda $\vec{a}(3,-2),\ \vec{b}(-2,1), \vec{c}(7,4)$ vektorlar berilgan $\vec{c}$ vektorni $\vec{a}$ va $\vec{b}$ vektorlar orqali chiziqli ifodasini aniqlang.
$\vec{c} = -15\vec{a} - 26\vec{b}$
$\vec{c} = 2\vec{a} - 5\vec{b}$
$\vec{c} = -11\vec{a} + 76\vec{b}$
$\vec{c} = 4\vec{a} - 9\vec{b}$

№15 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

Agar $\lvert\vec{a}\rvert = 6\sqrt{2}$, $\lvert\vec{b}\rvert = 5$, $(\vec{a} \wedge \vec{b}) = \frac{\pi}{4}$ bo'lsa $(2\vec{a} + 5\vec{b})^2$ ifoda qiymatini aniqlang
1513
386
48
72

№16 Fan bobi -2; Fan bo'limi-3; Qiyinchilik darajasi-1

yo’nalishidagi birlik vektor koordinitalarini aniqlang. $\vec{a} = -4\vec{i} + 2\vec{j} + \vec{k}$ vekt**or**
$\left(-\frac{4}{\sqrt{21}};\frac{2}{\sqrt{21}};\frac{1}{\sqrt{21}}\right)$
$\left(-\frac{4}{8};\frac{3\sqrt{3}}{3\sqrt{5}};\frac{1}{8}\right)$
$\left(-\frac{2}{\sqrt{11}};\frac{3\sqrt{3}}{2\sqrt{11}};\frac{1}{2\sqrt{11}}\right)$
$\left(-\frac{2}{3\sqrt{5}};\frac{3\sqrt{3}}{3\sqrt{5}};\frac{1}{3\sqrt{5}}\right)$

№17 Fan bobi -2; Fan bo’limi-1; Qiyinchilik darajasi-2

$A(-5,3),\ B(3,7)$ nuqtalar berilgan. AB kesmani $\lambda = \frac{3}{2}$ nisbatda bo’luvchi N nuqtaning koordinatasini aniqlang.
$N\left(-\frac{1}{5};\frac{27}{5}\right)$
$N\left(-\frac{4}{3};\frac{12}{3}\right)$
$N\left(-\frac{3}{7};-\frac{9}{7}\right)$
$N\left(\frac{5}{3};4\right)$

№18 Fan bobi -2; Fan bo’limi-1; Qiyinchilik darajasi-2

Uchlari $A(2,5),\ B(1,-1),\ C(1,7)$ nuqtalarda bo’lgan uchburchakning C uchidan o’tkazilgan medianasi uzunligini aniqlang.
$\frac{\sqrt{101}}{2}$
$\frac{\sqrt{105}}{3}$
$\sqrt{74}$
14

№19 Fan bobi -2; Fan bo’limi-1; Qiyinchilik darajasi-2

Uchlari $A(2,5),\ B(1,-1),\ C(1,7)$ nuqtalarda bo'lgan uchburchakning tomonlari uzunliklarini aniqlang.
$\sqrt{37}, \sqrt{5}, 8$
$4, \sqrt{11}, \sqrt{28}$
$\sqrt{11}, 4, \sqrt{29}$
6,3,7

№20 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-1

Qutb koordinatalarida berilgan $N\left(6, \frac{\pi}{2}\right)$ nuqtaning Dekart koordinatalarini aniqlang.
$N(0,6)$
$N(0,8)$
$N(1,-3)$
$N(3,-4)$

№21 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-1

$M\left(1, \frac{\pi}{4}\right)$ nuqtaga qutb boshiga nisbatan simmetrik bo'lgan nuqtaning koordinatasini aniqlang.
$M'\left(1; \frac{5\pi}{4}\right)$
$M'\left(1; -\frac{\pi}{4}\right)$
$M'\left(1; \frac{3\pi}{4}\right)$
$M'\left(0; \frac{2\pi}{3}\right)$

№22 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

Ordinata o'qida $A(-1,3)$ nuqtadan 6 birlik masofada joylashgan nuqtaning koordinatasini aniqlang.
$M_1(0;3+\sqrt{35})$ $M_2(0;3-\sqrt{35})$

$M_1(0;2-\sqrt{35})$ $M_2(0;2+\sqrt{35})$
$M_1(0;-7)$ $M_2(0;7)$
$M_1(0;4)$ $M_2(0;-4)$

№231 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-3

y ning qanday qiymatida uchlari $A(1,3),\ B(2,-1),\ C(4,y)$ nuqtalarada bo'lgan uchburchak teng yonli bo'ladi.
$C_1(4;-1+\sqrt{13})$ $C_2(4;-1-\sqrt{13})$
$C_1(4;\sqrt{14})$ $C_2(4;-\sqrt{14})$
$C_1(4;-5)$ $C_2(4;5)$
$C_1(4;2+\sqrt{15})$ $C_2(4;2-\sqrt{15})$

№24 Fan bobi -2; Fan bo'limi-2; Qiyinchilik darajasi-2

Markazi $C(0,2)$ nuqtada bo'lib, *Ox* o'qqa urinuvchi figura tenglamasini aniqlang.
$x^2+(y-2)^2=4$
$(x-1)^2+(y-2)^2=4$
$(x-2)^2+y^2=4$
$x^2+y^2=4$

№25 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

Berilgan $A(2,1)$ va $B(4,1)$ nuqtalardan baravar uzoqlikda yotuvchi nuqtalar to'plamini aniqlang.
$x-3=0$
$2x+y-2=0$

$x-2=0$
$x-2y+1=0$

№26 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

$M_0(2;1)$ nuqtadan o'tib $2x+3y+4=0$ to'g'ri chiziqqa parallel bo'lgan to'g'ri chiziq tenglamasini aniqlang.
$2x+3y-7=0$
$3x-2y+1=0$
$x-2y+1=0$
$2x+3y-4=0$

№27 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-1

$2x-3y-12=0$ to'g'ri chiziqning koordinata o'qlari bilan kesishgan nuqtalari koordinatalarini aniqlang.
$A(6,0),\ B(0,-4)$
$A(-6,0),\ B(0,4)$
$A(4,0),\ B(0,3)$
$A(-3,0),\ B(0,4)$

№28 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-1

$M_0(2;1)$ nuqtadan o'tib $2x+3y+4=0$ to'g'ri chiziqqa perpendikulyar bo'lgan to'g'ri chiziq tenglamasini aniqlang.
$3x-2y-4=0$
$3x+2y-4=0$
$2x-4y+5=0$
$-3x-2y-4=0$

№29 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-1

$2x+3y-6=0$ to'g'ri chiziqning burchak koeffitsienti k ni va b ni aniqlang**.**
$k=-\frac{2}{3},\ b=2$

$k=\frac{2}{3},\ b=2$
$k=\frac{2}{3},\ b=-2$
$k=\frac{1}{2},\ b=2$

№30 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-1

$x-y+3=0$ va $2x-y+4=0$ to'g'ri chiziqlarning kesishgan nuqtasi koordinatasini aniqlang.
$M(-1,2)$
$M(-2,3)$
$M(-2,1)$
$M(-1,-2)$

№31 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

$\vec{a}$ va $\vec{b}$ lar qanday shartni bajarganda $\left\|\vec{a}+\vec{b}\right\|=\left\|\vec{a}-\vec{b}\right\|$ vektorlarning moduli teng bo'ladi**?**
$\vec{a}\perp\vec{b}$
$\vec{a}=\vec{b}$
$\vec{a}//\vec{b}$
$\vec{a}\uparrow\downarrow\vec{b}$

№32 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

(Ox) o'qdan 3 birlik yuqorida joylashgan nuqtalar to'plamining tenglamasini tuzing.
y–3=0
x+3=0
y+3=0
x–3=0

№33 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

Berilgan $\vec{a}=\frac{3}{4}\vec{i}+3\vec{j}$ va $\vec{b}=\frac{1}{4}\vec{i}+n\vec{j}$ vektorlar n ning qanday qiymatida o'zaro kollinear bo'ladi.
n=1
n = 3
n=2

n=0

№34 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-1

M(2,3) nuqtadan 5x–4y-20=0 to'g'ri chiziqqa perpendikulyar bo'lib o'tuvchi to'g'ri chiziq tenglamasi tuzing.
4x+5y-23=0
$\frac{x-2}{4}=\frac{y-3}{5}$
5x+4y-20=0
x+y–23=0

№35 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

Koordinatalar boshidan $12x-5y+39=0$ to'g'ri chiziqqacha bo'lgan masofani aniqlang.
d=3
d=0
d=13
d=32

№36 Fan bobi -2; Fan bo'limi-2; Qiyinchilik darajasi-2

$4x^2+9y^2-36=0$ tenglama bilan aniqlanuvchi nuqtalar to'plami qanday chiziqni ifodalaydi?
Ellips $a^2=9,\ b^2=4$
Giperbola a=4, b=9
Ellips a=9, b=4
Aylana M(4,9) R=66

№37 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

Uchlari A(2,-3), B(0,-1) va C(-2, 5) nuqtalarda bo'lgan uchburchakning turini aniqlang.
Turli tomonli uchburchak
To'g'ri burchakli uchburchak
Teng yonli uchburchak;
Teng tomonli uchburchak.

№38 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-1

A(2,-3) va B(-1,4) nuqtalardan o'tuvchi to'g'ri chiziq tenglamasini yozing.
7x+3y-5=0
3x+7y=0
3x+7y–5=0
7x+3y= 0,

№39 Fan bobi -2; Fan bo'limi-2; Qiyinchilik darajasi-2

$4x^2-9y^2=36$ giperbolaning asimptotalari tenglamasini aniqlang.
$y=\pm\frac{2}{3}x$
$y=\pm\frac{3}{2}x$
$y=\pm\frac{3}{4}x$
$y=\pm\frac{1}{2}x$

№40 Fan bobi -2; Fan bo'limi-2; Qiyinchilik darajasi-2

Markazining koordinatasi C(2,-1) bo'lgan koordinita boshidan o'tuvchi aylananing tenglamasini yozing.
$(x-2)^2+(y+1)^2=5$
$(x-1)^2+y^2=5$
$x^2+y^2-4x-2y=0$
$x^2+y^2=4$

№41 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-1

Berilgan $\vec{a}=\{1,2\}$ vektorning modulini aniqlang.
$\lvert\vec{a}\rvert=\sqrt{5}$
$\lvert\vec{a}\rvert=2\sqrt{2}$
$\lvert\vec{a}\rvert=\sqrt{3}$
$\lvert\vec{a}\rvert=\sqrt{7}$

№42 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

a=2 va b=-3 koordinata o'qlaridan kesgan kesmasi berilgan bo'lsa, to'g'ri chiziq tenglamasini tuzing.
3x–2y–6=0
3x–2y-4=0
2x+3y-6=0
2x–3y=0

№43 Fan bobi -2; Fan bo'limi-2; Qiyinchilik darajasi-3

Giperbola uchlari orasidagi masofa 8, fokuslari orasidagi masofa $\rho(F_1,F_2)=10$ ga teng bo'lsa, giperbola teglamasini tuzing.

$\frac{x^2}{16}-\frac{y^2}{9}=1$
$x^2+\frac{y^2}{16}=1$
$\frac{x^2}{16}-y^2=1$
$x^2-\frac{y^2}{16}=1$

№44 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

M(-2,4) nuqtadan 2x–3y+6=0 to'g'ri chiziqqa parallel bo'lib o'tuvchi to'g'ri chiziq tenglamasini tuzing.
$\frac{x+2}{3}=\frac{y-4}{2}$
$\frac{x-2}{3}=\frac{y+4}{2}$
2x–5y+16=0
3y–2x+14=0

№45 Fan bobi -2; Fan bo'limi-2; Qiyinchilik darajasi-2

x^2–4=0 tenglama qanday chiziqni aniqlaydi.
O'zaro parallel ikki to'g'ri chiziq
Aylana
Giperbola
O'zaro kesishuvchi to'g'ri chiziqlar

№46 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-1

$\vec{a}+\vec{b}$ va $\vec{a}-\vec{b}$ vektorlar o'zaro kollinear bo'lishi uchun $\vec{a}$ va $\vec{b}$ vektorlar qanday shartni bajarishi kerak.
$\vec{a}//\vec{b}$
$\vec{a}\equiv\vec{b}$
$\vec{a}=\vec{b}$
$\vec{a}\perp\vec{b}$

№47 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

Agar A(1,-2) va $\overrightarrow{AB}$ {-5,4} berilgan bo'lsa, vektorning B(x,y) uchning koordinatalarini aniqlang.
B(-4,2)
B(4,6)
B(2,-4)
B(-4,6)

№48 Fan bobi -2; Fan bo'limi-2; Qiyinchilik darajasi-1

Markazi C(0,1) da va radiusi r=3 ga teng bo'lgan aylana tenglamasini tuzing.
$x^2+(y-1)^2=9$
$x^2+(y+1)^2=9$
$(x-1)^2+(y-1)^2=9$
$x^2+y^2=16$

№49 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

A(2,3) va B(-1,2) berilgan $\lvert AB\rvert$ kesmani $\frac{1}{2}$ nisbatda bo'luvchi nuqtaning koordinatalarini toping.
C$(1,\frac{8}{3})$
C$(\frac{1}{2},\frac{5}{2})$
C$(2\frac{1}{3},2\frac{2}{3})$
C(0,1)

№50 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

Agar (AB) kesmaning A(0,3) uchi va uning o'rtasi C(2,3) berilgan bo'lsa B(x,y) uchining koordinatasini aniqlang.
B(4,3)
B(3,4)
B(2, 3/2)
B(1, 3/4)

№51 Fan bobi -2; Fan bo'limi-2; Qiyinchilik darajasi-2

$x^2=-4y$ parabolaning direktrisa tenglamasini yozing.
y=1
y=3
y=2
y=-1

№52 Fan bobi -2; Fan bo'limi-3; Qiyinchilik darajasi-2

Ox o'qda B(0,0,4) nuqtadan 5 birlik masofada turgan nuqtani toping?
(3,0,0),(-3,0,0)
(4,0,0), (-4,0,0)
(0,4,0), (0,-4,0)

(5,0.0), (-5,0.0)

№53 Fan bobi -2; Fan bo'limi-3; Qiyinchilik darajasi-2

Koordinata boshidan A(1,-2,3) nuqtagacha bo'lgan masofani toping?
$\sqrt{14}$
$\sqrt{6}$
6
3

№54 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

Agar $\left\|\hat{a}\right\|=2,\ \left\|\hat{b}\right\|=3$ va $\bar{a}\perp\hat{b}$ bo'lsa $(5\hat{a}+3\hat{b})(2\hat{a}-\hat{b})$ ko'paytmani hisoblang?
13
12
5
9

№55 Fan bobi -2; Fan bo'limi-3; Qiyinchilik darajasi-3

2x-y+z-4=0, x+y-z=0, 2x-y+3z-6=0 tekisliklarning kesishish nuqtasini aniqlang?
M($\frac{4}{3};-\frac{1}{3};1$)
M(2,0,1)
M(1,0,0)
M(2,1,1)

№56 Fan bobi -2; Fan bo'limi-3; Qiyinchilik darajasi-2

$\left[\hat{a}\hat{b}\right]=\hat{0}$, $\hat{a}\neq\hat{0}$ va $\hat{b}\neq\hat{0}$ bo'lsa $\bar{a}\ \not\parallel\ \hat{b}$ vektorlar o'zaro qanday joylashgan?
$\bar{a}\parallel\hat{b}$
$\left(\hat{a}\hat{b}\right)=45^0$
$\hat{a}\perp\hat{b}$
$\left(\hat{a}\hat{b}\right)=30^0$

№57 Fan bobi -2; Fan bo'limi-3; Qiyinchilik darajasi-3

$\hat{a}=\{1,0,0\},\hat{b}\{0,-2,0\},\hat{c}\{0,0,3\}$ vektorlar aralash ko'paytmasini toping.
-3
3
0
2

№58 Fan bobi -2; Fan bo'limi-3; Qiyinchilik darajasi-2

Sferaning AB diametrning uchlari A(1,-2,3) va B(0,1,-1) ni bilgan holda markazi C nuqtani toping?
C(1/2,-1/2,1)
C(1/2,1/2,-1)
C(1/2,1/2,1)
C(0,-1/2,1)

№59 Fan bobi -2; Fan bo'limi-3; Qiyinchilik darajasi-2

$x=\frac{y+3}{2}=\frac{z-1}{3}$ to'g'ri chiziqni yo'naltiruvchi vektori koordinatalarini va boshlang'ich nuqtasi M_0 ning koordinatalarini toping
$\hat{p}=\{1,2,3\}$ $M_0(0,-3,1)$
$\hat{p}=\{1,2,3\}$ $M_0[0,3,1]$
$\hat{p}=\{1,2,3\}$ $M_0(0,3,-1)$
$\hat{p}=\{1,2,3\}$ $M_0(0,-3,1,2)$

№60 Fan bobi -2; Fan bo'limi-3; Qiyinchilik darajasi-2

$\hat{a}=\hat{i}-m\hat{j}+2\hat{k}$ **va** $\hat{b}=4\hat{i}+2\hat{j}-m\hat{k}$ vektorlar m ning qanday qiymatida perpendikulyar bo'ladi?
$m=1$
$m=6$
$m=4$
$m=2$

№61 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

$\left(\hat{ab}\right)=0,\quad a\neq 0\quad va\quad b\neq 0$ bo'lsa $a\quad va\ b$ vektorlar o'zaro qanday joylashgan?
$\hat{a}\perp\hat{b}$
$\hat{a}\,//\,\hat{b}$
$\hat{a}=\hat{b}$
$\hat{a}=-\hat{b}$

№62 Fan bobi -2; Fan bo'limi-3; Qiyinchilik darajasi-3

$\grave{I}_1(1,3,1)\ \grave{I}_2(0,2,4)\ \grave{I}_3(0,0,1)$ nuqtalardan o'tgan tekislik tenglamasini toping?
9x-3y+2z-2=0
9x+3y-2
z-4=0
9x-3y+2z+2=0

№63 Fan bobi -2; Fan bo'limi-3; Qiyinchilik darajasi-1

$x^2+(y+3)^2+(z-1)^2 \le 16$ tengsizlik qanday nuqtalar to'plamini aniqlaydi?
Shar, markazi (0,-3,1) r=4
Sfera, markazi (0,-3,1) radiusi r=4
Aylana markazi (0,-3,1)r=4
Shar, markazi (0,-3,2) r=4

№84 Fan bobi -2; Fan bo'limi-3; Qiyinchilik darajasi-2

$M_1(3,-2,-7)$ nuqtadan o'tib, $2x-3z+5=0$ tekislikka parallel tekislik tenglamasini tuzing.
$2x-3z-27=0$
$2x-3y+7z-4=0$
$6y-5z+3=0$
$4x-y+5z-7=0$

№64 Fan bobi -2; Fan bo'limi-3; Qiyinchilik darajasi-2

$M_1(2,0,-3)$ nuqtadan o'tib $\frac{x-1}{5}=\frac{y+2}{2}=\frac{z+1}{-1}$ to'g'ri chiziqqa parallel bo'lgan to'g'ri chiziq tenglamasini aniqlang.
$\frac{x-2}{5}=\frac{y}{2}=\frac{z+3}{-1}$
$\frac{x-5}{2}=\frac{y+2}{-4}=\frac{z}{8}$
$\frac{x}{5}=\frac{y+3}{-2}=\frac{z-1}{4}$
$\frac{x-3}{2}=\frac{y-1}{3}=\frac{z-2}{1}$

№65 Fan bobi -2; Fan bo'limi-3; Qiyinchilik darajasi-2

$M_1(1,-2,1)$ va $M_2(3,1,-1)$ nuqtalardan o'tuvchi to'g'ri chiziq tenglamasini aniqlang.
$\frac{x-1}{2}=\frac{y+2}{3}=\frac{z-1}{-2}$
$\frac{x}{5}=\frac{y+7}{3}=\frac{z-2}{1}$
$\frac{x}{7}=\frac{y+3}{1}=\frac{z-4}{11}$

$\frac{x-2}{5}=\frac{y+3}{4}=\frac{z+1}{8}$

№66 Fan bobi -2; Fan bo'limi-4; Qiyinchilik darajasi-2

$x^2+(y+3)^2+(z-1)^2=16$ tenglik qanday nuqtalar to'plamini aniqlaydi.
Markazi (0,-3, 1), radiusi r=4 bo'lgan sfera
Markazi (0,-3,1), radiusi r=4 bo'lgan shar
Markazi (0,-3, 1), radiusi r=4 bo'lgan aylana
Yarim fazo

№67 Fan bobi -2; Fan bo'limi-3; Qiyinchilik darajasi-3

$M_1(1,3,1),\ M_2(0,2,4),\ M_3(0,0,1)$ nuqtalardan o'tgan tekislik tenglamasini tuzing.
9x-3y+2z-2=0
9x-3y-2z+2=0
9x+3y-2z-4=0
3x+9y-2z-2=0

№68 Fan bobi -2; Fan bo'limi-3; Qiyinchilik darajasi-3

$M_1(1,3,1),\ M_2(0,2,4),\ M_3(0,0,1)$ nuqtalardan o'tgan tekislik tenglamasini tuzing.
2x+y+4z-17=0
2x-y+4z-17=0
2x-y+4z+17=0
2x-y-4z+17=0

№69 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

$\vec{a}(3,\lambda),\ \vec{b}(5,-1)$ vektorlar berilgan. λ ning qanday qiymatida $\vec{a}$ va $\vec{b}$ vektorlar perpendikulyar bo'ladi.
$\lambda=15$
$\lambda=20$
$\lambda=18$
$\lambda=6$

№70 Fan bobi -1; Fan bo'limi-2; Qiyinchilik darajasi-2

Ikki to'plamning birlashmasi bu
to'plamlarning kamida biriga tegishli elementlar to'plami
A to'plamga tegishli, lekin B to'plamga tegishli bo'lmagan elementlar to'plami
B to'plamga tegishli, lekin A to'plamga tegishli bo'lmagan elementlar to'plami
Ikkalasiga bir vaqtda tegishli bo'lgan elementlar to'plami

№71 Fan bobi -1; Fan bo’limi-2; Qiyinchilik darajasi-2

Ikki to’plamning kesishmasi bu
bir vaqtda ikkala to’plamda bo’lgan elementlar to’plami
A to’plamga tegishli, lekin B to’plamga tegishli bo’lmagan elementlar
B to’plamga tegishli, lekin A to’plamga tegishli bo’lmagan elementlar to’plami
Hech bo’lmaganda to’plamlarning biriga tegishli elementlardan tashkil topgan to’plami

№72 Fan bobi -1; Fan bo’limi-2; Qiyinchilik darajasi-2

Qaysi amal to’plamlar ustida bajarilmaydi?
Konyunktsiya
Birlashma
Kesishma
Ayirma

№73 Fan bobi -1; Fan bo’limi-2; Qiyinchilik darajasi-2

Qaysi to’plam qolgan to’plamlarning qism to’plami bo’ladi?
N
I
Q
R

№74 Fan bobi -1; Fan bo’limi-2; Qiyinchilik darajasi-2

Agar A={1;5;6;8;10} B={-5;3;4;5;8;9;10} bo’lsa,A∩B nimaga teng bo’ladi?
{5,8,10}
{3;4;9;-5;6}
{1;-5;5;8}
{5;6;10;9}

№75 Fan bobi -1; Fan bo’limi-2; Qiyinchilik darajasi-2

A=(-2;3;1) , B=[-4;-2;1] bo’lsa, A∩Bni toping.
(-2;1]
(-2;1;3)
(-4;3;-2)
[-4;3;-2;1]

№76 Fan bobi -2; Fan bo’limi-1; Qiyinchilik darajasi-1

To’g’ri chiziqning umumiy tenglamasini toping.
$ax+by+c=0$
$\frac{x}{m}+\frac{y}{n}=1$
$y=kx+d$
$ax+by=0$

№77 Fan bobi -2; Fan bo’limi-1; Qiyinchilik darajasi-1

To’g’I chiziqning burchak koeffitsientli tenglamasini toping.
$y=kx+d$
$\frac{x}{m}+\frac{y}{n}=1$
$ax+by+c=0$
$ax+by=0$

№78 Fan bobi -2; Fan bo’limi-1; Qiyinchilik darajasi-2

To’g’ri chiziqlarning parallellik shartini ko’rsating.
$k_1=k_2$
$k_1\neq k_2$
$k_1\cdot k_2=1$
$k_1\cdot k_2=-1$

№79 Fan bobi -2; Fan bo’limi-1; Qiyinchilik darajasi-1

To’g’ri chiziqning kesmalar bo’yicha tenglamasini toping.
$\frac{x}{m}+\frac{y}{n}=1$
$ax+by+c=0$
$y=kx+d$
$ax+by=0$

№80 Fan bobi -2; Fan bo’limi-1; Qiyinchilik darajasi-2

To’g’ri chiziqlarning parallellik shartini ko’rsating.
$k_1\cdot k_2=-1$
$k_1\neq k_2$

$k_1 \cdot k_2 = 1$
$k_1 = k_2$

№81 Fan bobi -2; Fan bo'limi-2; Qiyinchilik darajasi-1

Ellipsning kanonik tenglamasini ko'rsating.
$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$
$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$
$y^2 = 2px_{(p>0)}$
$x^2 = 2py \ (p > 0)$

№82 Fan bobi -2; Fan bo'limi-2; Qiyinchilik darajasi-1

Giperbolaning kanonik tenglamasini ko'rsating.
$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$
$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$
$y^2 = 2px_{(p>0)}$
$x^2 = 2py \ (p > 0)$

№83 Fan bobi -2; Fan bo'limi-2; Qiyinchilik darajasi-2

Parabolaning kanonik tenglamasini ko'rsating.
$y^2 = 2px_{(p>0)}$
$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$
$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$
$x^2 = 2py \ (p > 0)$

№84 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-1

$\overrightarrow{AB} = \{6,-8\}$ vektorning uzunligini toping.
10
12

11
14

№85 Fan bobi -4; Fan bo'limi-1; Qiyinchilik darajasi-2

Funktsiyaning aniqlanish sohasini toping $y = \sin x$
$(-\infty; +\infty)$
$(0;\infty)$
$x \geq 0$
$x \neq 1$

№86 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

$\vec{a}(3,1),\ \vec{b}(3,-2)$ vektorlarning skalyar ko'paytmasini aniqlang
7
10
11
8

№87 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

$\vec{a}(3,4),\ \vec{b}(5,-1)$ vektorlarning skalyar ko'paytmasini aniqlang
11
10
13
8

№88 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

$\vec{a}(5,-4),\ \vec{b}(6,-1)$ vektorlarning skalyar ko'paytmasini aniqlang
34
10
13
8

№89 Fan bobi -2; Fan bo'limi-2; Qiyinchilik darajasi-2

$y^2 = 8x$ parabolaning parameti qiymatini toping.
$p = 4$
$p = 6$
$p = 8$

$p=16$

№90 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-1

Ikki nuqta orasidagi masofani topish formulasini aniqlab bering
$d=\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$
$d=\sqrt{(x_2-x_1)^2-(y_2-y_1)^2}$
$d=\sqrt{(x_2+x_1)^2-(y_2+y_1)^2}$
$d=\sqrt{(x_2+x_1)^2+(y_2+y_1)^2}$

№91 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

$A(1;-2)$ va $B(-2;1)$ nuqtalar orasidagi masofani toping
$\lvert AB\rvert=9\sqrt{2}$
$\lvert AB\rvert=15$
$\lvert AB\rvert=12$
$\lvert AB\rvert=12\sqrt{5}$

№92 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

$A(1;4)$ va $B(-2;1)$ nuqtalar orasidagi masofani toping
$\lvert AB\rvert=9\sqrt{2}$
$\lvert AB\rvert=15$
$\lvert AB\rvert=12$
$\lvert AB\rvert=12\sqrt{5}$

№93 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

$A(1;1)$ va $B(2;1)$ nuqtalar orasidagi masofani toping
$\lvert AB\rvert=1$
$\lvert AB\rvert=15$
$\lvert AB\rvert=12$
$\lvert AB\rvert=12\sqrt{5}$

№94 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

$A(2;0)$ va $B(4;0)$ nuqtalar orasidagi masofani toping
$\|AB\| = 2$
$\|AB\| = 15$
$\|AB\| = 12$
$\|AB\| = 12\sqrt{5}$

№95 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

Quyidagi vektorlarning qanday joylashgan 1)$\vec{a}(1,2),\ \vec{b}(2,4)$
kollinear
kollinear emas.
Komplanar
O'zaro qarama qarshi yo'nalgan

№96 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

$\vec{AB} = \{6,-8\}$ vekto`rning uzinliginii toping
10
12
14
19

№97 Fan bobi -2; Fan bo'limi-3; Qiyinchilik darajasi-2

$M_1(1;-2;2)$ nuqtadan $2x + y - 2z - 7 = 0$ tekislikgacha bo`lgan masofani toping.
11
12
14
19

№98 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

$\vec{AB} = \{0,-5\}$ vekto`rning uzinliginii toping
5
12
14
19

№99 Fan bobi -2; Fan bo'limi-3; Qiyinchilik darajasi-2

Ikki vektorning vektor ko’paytmasining geometrik ma`nosi nimani anglatadi?
Parallelogramm yuzasi
Kvadrat yuzasi
Uchburchak yuzasi
Parallelepiped hajmi

№100 Fan bobi -2; Fan bo’limi-2; Qiyinchilik darajasi-2

Tekislikdagi ixtiyoriy nuqtadan berilgan to’g`ri chiziqqacha va berilgan nuqtagacha bo’lgan masofalari teng nuqtalarning geometrik o`rni ……dan iboratdir
Parabola
Giperbola
Ellips
Aylana

№101 Fan bobi -2; Fan bo’limi-2; Qiyinchilik darajasi-2

Tekislikdagi berilgan nuqtadan berilgan ikki nuqtasigacha bo’lgan masofalar ayirmasining moduli berilgan kesma uzunligiga teng bolg`an nuqtalarning geometrik o’rni…
Giperbola deyiladi
Parabola deyiladi
Ellips deyiladi
Aylana deyiladi

№102 Fan bobi -2; Fan bo’limi-2; Qiyinchilik darajasi-1

Ellips fokuslari orasidagi masofaning katta o`qining uzunligiga nisbati nima deyiladi?
Ekstsentrisitet
Dirrektrisa
Fokal radiusi
Markazi

№103 Fan bobi -2; Fan bo’limi-1; Qiyinchilik darajasi-2

$2x-3y-12=0$ to’g’ri chiziqning koordinata o’qlari bilan kesishish nuqtalari koordinatalarini aniqlang.
$A(6,0),\ B(0,-4)$
$A(-6,0),\ B(0,4)$
$A(4,0),\ B(0,3)$
$A(-3,0),\ B(0,4)$

№104 Fan bobi -2; Fan bo’limi-1; Qiyinchilik darajasi-2

$Ax + By + C = 0$ to`g`ri chiziq tenglamasida $A \neq 0, B = 0, C = 0$ bo`lsa
Oy o`qini beradi.
Oy o`qiga parallel.
Ox o`qiga parallel
Koordinata boshidan o`tadi

№105 Fan bobi -2; Fan bo'limi-2; Qiyinchilik darajasi-3

Uchlari orasidagi masofa 8, fokuslari orasidagi masofa 10 ga teng bo'lgan giperbola tenglamasini toping.
$\frac{x^2}{16} - \frac{y^2}{9} = 1$
$x^2 + \frac{y^2}{16} = 1$
$\frac{x^2}{16} - y^2 = 1$
$x^2 - \frac{y^2}{16} = 1$

№106 Fan bobi -2; Fan bo'limi-2; Qiyinchilik darajasi-3

Kichik o'qi 8, fokuslari orasidagi masofa 10 ga teng bo'lgan ellips tenglamasini toping.
$\frac{x^2}{41} + \frac{y^2}{16} = 1$
$x^2 + \frac{y^2}{16} = 1$
$\frac{x^2}{16} - y^2 = 1$
$x^2 - \frac{y^2}{16} = 1$

№107 Fan bobi -2; Fan bo'limi-2; Qiyinchilik darajasi-1

Yo`nalishga ega kesma nima deb ataladi?
vektor
nuqta
To`g`ri chiziq
Nur

№108 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-1

Ort deganimiz nima?
uzunligi birga teng vektor
uzunligi nolga teng vektor
yo`nalishga ega vektor
koordinatalar uqlari

№109 Fan bobi -2; Fan bo'limi-2; Qiyinchilik darajasi-2

$y=\frac{k}{x}$ funktsiyasining grafigi qanday chiziq bo'ladi.
giperbola
Parabola
To'g'ri siziq
Ayqash chiziq

№110 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

$x-y=0$ va $x+y=0$ to`g`ri chiziqlarning kesisish nuqtasinii toping
(0;0)
(1;0)
(-1;1)
(2;-2)

№111 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

Agar $\hat{a}=5\hat{i}+3\hat{j}$, $\hat{b}=-4\hat{i}+6\hat{j}$, $\hat{c}=3\hat{i}-7\hat{j}$ berilgan bo'lsa, $\hat{a}+\hat{b}+\hat{c}$ vektornung koordinatasini toping.
$\hat{a}+\hat{b}+\hat{c}=\{4,2\}$
$\hat{a}+\hat{b}+\hat{c}=(14,12)$
$\hat{a}+\hat{b}+\hat{c}=(12,11)$
$\hat{a}+\hat{b}+\hat{c}=(6,10)$

№112 Fan bobi -2; Fan bo'limi-3; Qiyinchilik darajasi-2

$M_0(3,-1,7)$ nuqtadan o'tib $\frac{x+1}{2}=\frac{y-3}{-4}=\frac{z-1}{5}$ to'g'ri chiziqqa parallel bo'lgan to'g'ri chiziq tenglamasini toping
$\frac{x-3}{2}=\frac{y+1}{-4}=\frac{z-7}{5}$
$\frac{x-2}{-4}=\frac{y-3}{2}=\frac{z-1}{5}$
$\frac{x-1}{3}=\frac{y+1}{-4}=\frac{z-5}{1}$

$\frac{x-2}{4}=\frac{y+1}{2}=\frac{z-1}{3}$

№113 Fan bobi -4; Fan bo’limi-5; Qiyinchilik darajasi-2

$\int_0^1 8x^7 dx$
1
2
$\frac{1}{2}$
$\frac{1}{2}+c$

№114 Fan bobi -4; Fan bo’limi-5; Qiyinchilik darajasi-2

$\int_0^2 x dx$
2
1
$\frac{1}{2}$
$\frac{1}{2}+c$

№115 Fan bobi -4; Fan bo’limi-5; Qiyinchilik darajasi-2

$\int_0^4 (2x-3)dx$
4
3
1
-1

№116 Fan bobi -4; Fan bo’limi-5; Qiyinchilik darajasi-1

$\int_1^3 x dx$
4
3
1
-1

№117 Fan bobi -4; Fan bo’limi-5; Qiyinchilik darajasi-2

$\int_0^{\pi} \cos x\,dx$
0
$\frac{1}{2}+c$
1
-1

№118 Fan bobi -2; Fan bo’limi-3; Qiyinchilik darajasi-1

Tekislikning holati nechta nuqta bilan to’liq aniqlanadimi?
3
4
2
5

№119 Fan bobi -4; Fan bo’limi-5; Qiyinchilik darajasi-2

Aniq integralni hisoblang $\int_0^1 (x^2+1)dx$
$\frac{4}{3}$
$\frac{1}{3}$
$\frac{2}{3}$
$\frac{5}{3}$

№120 Fan bobi -4; Fan bo’limi-5; Qiyinchilik darajasi-2

Aniq integralni hisoblang $\int_0^2 (2x-1)dx$
2
1
3
-1

№121 Fan bobi -4; Fan bo’limi-3; Qiyinchilik darajasi-2

Hosilani hisoblang: $y=x^2+9x-4$

$2x+3$
$2x+2$
$6x-5$
$6x-2$

№122 Fan bobi -4; Fan bo'limi-3; Qiyinchilik darajasi-2

Hosilani hisoblang: $y = x^2 + 9x - 4$
$2x+9$
$2x+2$
$6x-5$
$6x-2$

№123 Fan bobi -4; Fan bo'limi-3; Qiyinchilik darajasi-2

Hosilani hisoblang: $y = 3x^2 + 2x - 4$
$6x+2$
$x+5$
$6x-5$
$6x-2$

№124 Fan bobi -4; Fan bo'limi-5; Qiyinchilik darajasi-2

Aniq integralni hisoblang: $\int_0^2 (3x^2 - 3)\,dx$
2
3
1
-1

№125 Fan bobi -4; Fan bo'limi-5; Qiyinchilik darajasi-2

$\int_{-1}^{0} (x+1)dx$ integralni hisoblang
$\frac{1}{2}$
$\frac{\sin^2}{2} + x$
$-\frac{1}{2}$

0

№126 Fan bobi -2; Fan bo’limi-1; Qiyinchilik darajasi-2

$\vec{a}(3,\lambda)$, $\vec{b}(5,-1)$ vektorlar berilgan. λ ning qanday qiymatida $\vec{a}$ va $\vec{b}$ vektorlar perpendikulyar bo’ladi.
$\lambda = 15$
$\lambda = 20$
$\lambda = 18$
$\lambda = 6$

№126 Fan bobi -3; Fan bo’limi-1; Qiyinchilik darajasi-1

Yasahga doir masalani yechiah necha bosqichdan iborat
4
3
5
2

№127 Fan bobi -3; Fan bo’limi-1; Qiyinchilik darajasi-1

Uchburchak yasah uchun uning necha elementi berilrshi zarur
3, ulardan kamida bittasi kesma uzunligi bo’lishi zarur
2, ulardan kamida bittasi kesma uzunligi bo’lishi zarur
4, ulardan kamida bittasi kesma uzunligi bo’lishi zarur
3

№128 Fan bobi -4; Fan bo’limi-2; Qiyinchilik darajasi-3

$\lim\limits_{x\to 1}\dfrac{x^2-5x+4}{x^2-1}$ ni hisoblang
$-\dfrac{3}{2}$
$-\dfrac{3}{4}$
$\dfrac{2}{5}$
3

№129 Fan bobi -4; Fan bo’limi-5; Qiyinchilik darajasi-2

$\int_0^2 (6x^2 - 7)dx$
2
4
-1
3

№130 Fan bobi -4; Fan bo'limi-7; Qiyinchilik darajasi-2

$xy' - y = 0$ tenglamani eching.
$y = cx$
$y^2 = cx$
$x^2 + y^2 = c$
$x^2 - y^2 = c$

№131 Fan bobi -4; Fan bo'limi-4; Qiyinchilik darajasi-2

$\int (2x-1)^{20} dx$ integralni toping.
$\frac{(2x-1)^{21}}{42}$
$\frac{(2x-1)^{21}}{21}$
$\frac{2x-1}{2}$
$\frac{(2x-1)^{19}}{10}$

№132 Fan bobi -4; Fan bo'limi-5; Qiyinchilik darajasi-2

$\int_0^4 \left(x - 4\sqrt{x}\right)$integralni hisoblang
$-13\frac{1}{3}$
-13
$3\frac{1}{3}$

$1\frac{1}{3}$

№133 Fan bobi -4; Fan bo'limi-3; Qiyinchilik darajasi-2

$y=(tgx)$ funksiya hosilasini toping
$(tgx)' = \frac{1}{\cos^2 x}$
$(tgx)' = \frac{1}{\cos x}$
$(tgx)' = \frac{x}{\cos^2 x}$
$(tgx)' = -\frac{1}{\cos^2 x}$

№134 Fan bobi -4; Fan bo'limi-5; Qiyinchilik darajasi-2

$\int_0^{\pi} \cos x\,dx$
0
$\frac{1}{2}+c$
4
3

№135 Fan bobi -4; Fan bo'limi-3; Qiyinchilik darajasi-1

y= (x^m) funksiya hosilasini toping
$(x^m)' = mx^{m-1}$
$(x^m)' = (m-1)x^{m-1}$
$(x^m)' = x^{m-1}$
$(x^m)' = m^2 x^{m-1}$

№136 Fan bobi -4; Fan bo'limi-3; Qiyinchilik darajasi-1

$y=(a^x)$ funksiya hosilasini toping
$(a^x)' = a^x \ln a$

$\left(a^x\right)' = a^x \ln x$
$\left(a^x\right)' = a \ln a$
$\left(a^x\right)' = \ln a$

№137 Fan bobi -4; Fan bo'limi-3; Qiyinchilik darajasi-1

$y = \left(\ln x\right)$ funksiya hosilasini toping
$(\ln x)' = \frac{1}{x}$
$\left(\ln x\right)' = -\frac{1}{x}$
$\left(\ln x\right)' = x$
$\left(\ln x\right)' = -x$

№138 Fan bobi -4; Fan bo'limi-2; Qiyinchilik darajasi-2

$\lim\limits_{n\to\infty} \frac{3n^2 - 4n + 8}{4n^2 + 5n - 9}$ ni hisoblang
$\frac{3}{4}$
$\frac{1}{4}$
$-\frac{3}{4}$
$\frac{2}{5}$

№139 Fan bobi -4; Fan bo'limi-2; Qiyinchilik darajasi-3

$\lim\limits_{x\to\pi} \frac{\sin 3x}{\sin 2x}$ ni hisoblang
$-\frac{3}{2}$
$\frac{1}{4}$
$-\frac{3}{4}$
$\frac{2}{5}$

№140 Fan bobi -4; Fan bo’limi-4; Qiyinchilik darajasi-1

$\int x^5\,dx$ ni hisoblahg
$\frac{x^6}{6}+C$
$\frac{x^5}{5}+C$
$\frac{x^6}{7}+C$
$\frac{x^7}{6}+C$

№141 Fan bobi -4; Fan bo’limi-1; Qiyinchilik darajasi-1

Funksiyaning berilish usullarini ko’rsating
Analitik usul, jadval usul, grafik usul
Analitik usul, jadval usul
Jadval usul, grafik usul
Grafik usul

№142 Fan bobi -4; Fan bo’limi-1; Qiyinchilik darajasi-2

Qaysi funksiya juft?
x^6
x^7
x^3+1
x^{-1}

№143 Fan bobi -4; Fan bo’limi-1; Qiyinchilik darajasi-1

Qaysi funksiya davriy?
sinx
$\sqrt{x}$
x + 4
x^3+2

№144 Fan bobi -4; Fan bo’limi-1; Qiyinchilik darajasi-2

$y = \frac{1}{x-6}$ funksiyaning aniqlanish sohasini toping.
(-∞; 6) U (6;+∞)
(-∞;6) U [6;+∞)
(-∞; 6)
(-∞; -6) U (-6;+∞)

№145 Fan bobi -4; Fan bo’limi-2; Qiyinchilik darajasi-1

Limitni hisoblang $\lim\limits_{x\to 3}(2x-3)$
3
12
6
0

№146 Fan bobi -4; Fan bo’limi-2; Qiyinchilik darajasi-1

Limitni hisoblang $\lim\limits_{x\to 5}(3x-10)$
5
12
6
0

№147 Fan bobi -4; Fan bo’limi-2; Qiyinchilik darajasi-2

Limitni hisoblang: $\lim\limits_{x\to 6}(3x-9)$
6
12
5
0

№148 Fan bobi -4; Fan bo’limi-2; Qiyinchilik darajasi-1

Limitni hisoblang: $\lim\limits_{x\to 3}(4x-9)$
3

12
5
0

№149 Fan bobi -4; Fan bo’limi-4; Qiyinchilik darajasi-1

Berilgan funksiyalar orasidan chiziqli funksiyani aniqlang
$\mathbf{y} = 8x - 3$
$\mathbf{y} = 8x^2 - 3$
$\mathbf{y} = \frac{3}{8x}$
$y = \sqrt{8x - 3}$

№150 Fan bobi -4; Fan bo’limi-2; Qiyinchilik darajasi-2

Hisoblang $\lim\limits_{x \to 0} \frac{\sin 5x}{x}$
5
3
4
2

№151 Fan bobi -4; Fan bo’limi-2; Qiyinchilik darajasi-2

Hisoblang: $\lim\limits_{x \to 3} \frac{x-3}{x^2-9}$
$\frac{1}{6}$
3
$\frac{1}{3}$
2

№152 Fan bobi -4; Fan bo’limi-2; Qiyinchilik darajasi-1

Hisoblang: $\lim\limits_{x \to 2} \frac{x^2 - 2x}{x - 2}$
2
3

$\frac{1}{3}$
2

№153 Fan bobi -4; Fan bo’limi-2; Qiyinchilik darajasi-1

Hisoblang: $\lim\limits_{x\to 1}\left(5x-3-\frac{1}{x}\right)$
1
3
$\frac{1}{3}$
2

№154 Fan bobi -4; Fan bo’limi-2; Qiyinchilik darajasi-1

Birinchi ajoyib limit qaysi?
$\lim\limits_{x\to 0}\frac{\sin x}{x}$
$\lim\limits_{x\to 3}\frac{3}{2x-6}$
$\lim\limits_{x\to 5}\left(3x+2\right)$
$\lim\limits_{x\to\infty}\left(x^2+4x\right)$

№155 Fan bobi -4; Fan bo’limi-2; Qiyinchilik darajasi-1

Ikkinchi ajoyib limitni aniqlang.
$\lim\limits_{x\to\infty}\left(1+\frac{1}{x}\right)^x=e$
$\lim\limits_{x\to\infty}\left(1-\frac{1}{x}\right)=e$
$\lim\limits_{x\to\infty}\left(\frac{1}{x}\right)=e$
$\lim\limits_{x\to\infty}\left(1+\frac{1}{x}\right)=1$

№156 Fan bobi -4; Fan bo’limi-3; Qiyinchilik darajasi-2

Hisoblang: $\left((3x-1)^7\right)'$
$21(3x-1)^6$
$(3x-1)^6$
$7(3x-1)$
$21(3x-1)^{-6}$

№157 Fan bobi -4; Fan bo’limi-3; Qiyinchilik darajasi-2

Qaysi formula noto’g’ri?
$(x^n)'=n\,x^n$
Sin x ′ = Cos x
Cos x ′ = - Sin x
$(x^n)'=n\,x^{n-1}$

№158 Fan bobi -4; Fan bo’limi-3; Qiyinchilik darajasi-2

Hosilani hisoblang: $y=\sin 3x$
$3\cos 3x$
$\cos 3x$
$\sin 3x$
$\cos x$

№159 Fan bobi -4; Fan bo’limi-3; Qiyinchilik darajasi-2

Hosilani hisoblang: $y=\dfrac{x-1}{x+1}$
$\dfrac{2}{x^2+2x+1}$
$\dfrac{3}{x^2+2x+1}$
$\dfrac{2}{x^2-2x-1}$

$\frac{2}{x^2-3x+1}$

№160 Fan bobi -4; Fan bo’limi-3; Qiyinchilik darajasi-2

Hosilaning mexanik ma’nosi nimadan iborat?
Tezlik yo‘ldan vaqt bo‘yicha olingan hosila, hosilaning mexanik ma’nosini beradi.
Vaqt yo‘ldan tezlik bo‘yicha olingan hosila, hosilaning mexanik ma’nosini beradi.
Tezlik vaqtdan yo‘l bo‘yicha olingan hosila, hosilaning mexanik ma’nosini beradi
Vaqt tezlikdan yo‘l bo‘yicha olingan hosila, hosilaning mexanik ma’nosini beradi

№161 Fan bobi -3; Fan bo’limi-1; Qiyinchilik darajasi-2

Sirkul va chizg’ich yordamida bajarib bo’lmaydi
Ihtiyoriy burchakni teng uchga bo’lish
Ihtiyoriy burchakni teng ikkiga bo’lish
To’g’ri burchak yasash
Berilgan burchakka teng burchak yasash

№162 Fan bobi -3; Fan bo’limi-1; Qiyinchilik darajasi-2

Ixtiyoriy uchburchak yasash uchun berilgan kattaliklarning kamida nechtasi kesma uzunligidan iborat bo’lishi kerak
bittasi
ikkitasi
uchtasi
Hech biri

№163 Fan bobi -2; Fan bo’limi-4; Qiyinchilik darajasi-1

Ellipsoid tenglamasini aniqlang
$\frac{x^2}{a^2}+\frac{y^2}{a^2}+\frac{z^2}{c^2}=1$
$\frac{x^2}{a^2}-\frac{y^2}{b^2}+\frac{z^2}{c^2}=1$

$\frac{x^2}{p}+\frac{y^2}{q}=2z$
$\frac{x^2}{a^2}-\frac{y^2}{b^2}-\frac{z^2}{c^2}=1$

№164 Fan bobi -2; Fan bo'limi-4; Qiyinchilik darajasi-1

Bir pallali giperboloid tenglamasini aniqlang
$\frac{x^2}{a^2}-\frac{y^2}{b^2}+\frac{z^2}{c^2}=1$
$\frac{x^2}{a^2}+\frac{y^2}{a^2}+\frac{z^2}{c^2}=1$
$\frac{x^2}{a^2}-\frac{y^2}{b^2}-\frac{z^2}{c^2}=1$
$\frac{x^2}{p}+\frac{y^2}{q}=2z$

№165 Fan bobi -4; Fan bo'limi-1; Qiyinchilik darajasi-2

$y=x$ funksiyaning qiymatlari to`plami
$(-\infty;+\infty)$
$(0;\infty)$
$[0;+\infty)$
$[-1;1]$

№166 Fan bobi -4; Fan bo'limi-1; Qiyinchilik darajasi-2

$y=\frac{1}{x^2-4x+3}$ funksiyaning uzilish nuqtalarini toping
$x=1,\ x=3$
$x=1,\ x=2$
$x=1,\ x=-3$
$x=4,\ x=3$

№167 Fan bobi -4; Fan bo’limi-4; Qiyinchilik darajasi-2

$\int \frac{dx}{x^2} =$
$-\frac{1}{x}+c$
c
$x + c$
x

№168 Fan bobi -4; Fan bo’limi-5; Qiyinchilik darajasi-2

Hisoblang: $\int_0^3 x^2 dx$
9
12
4
8

№169 Fan bobi -4; Fan bo’limi-5; Qiyinchilik darajasi-2

Hisoblang: $\int_1^4 \sqrt{x}\, dx$
2
3
0
1

№170 Fan bobi -4; Fan bo’limi-5; Qiyinchilik darajasi-2

Hisoblang: $\int_{-1}^3 \left(x^3+1\right)dx$
24
3

0
1

№171 Fan bobi -4; Fan bo’limi-4; Qiyinchilik darajasi-2

Berilgan funksiyaning boshlang’ich funksiyasi deb nimaga aytiladi?
Biror oraliqda aniqlangan $f(x)$ funksiya uchun bu oraliqning hamma qiymatlarida $F'(x)=f(x)$ yoki $dF(x)=f(x)dx$ shart bajarilsa u holda $F(x)$ funksiya $f(x)$ ning *boshlang’ich funksiyasi* diyiladi.
Biror oraliqda aniqlangan $f(x)$ funksiya uchun bu oraliqning hamma qiymatlarida $F(x)=f'(x)$ yoki $dF(x)=f(x)dx$ shart bajarilsa u holda $F(x)$ funksiya $f(x)$ ning *boshlang’ich funksiyasi* diyiladi.
$f(x)$ funksiyaning hamma qiymatlarida $dF(x)=f(x)dx$ shart bajarilsa $F(x)$ funksiya $f(x)$ ning *boshlang’ich funksiyasi* diyiladi.
$f(x)$ funksiyaning hamma qiymatlarida $dF(x)=-f(x)dx$ shart bajarilsa $F(x)$ funksiya $f(x)$ ning *boshlang’ich funksiyasi* diyiladi.

№172 Fan bobi -4; Fan bo’limi-1; Qiyinchilik darajasi-1

Funksiyalar orasidan kasr ratsional funksiyani aniqlang
$y=\frac{ax+b}{cx+d}$
$y=\sin x$
$y=e^x$
$y=\log_a x$

№173 Fan bobi -4; Fan bo’limi-1; Qiyinchilik darajasi-1

Funksiyalar orasidan ko’rsatkichli funksiyani aniqlang
$y=a^x$
$y=\log_a x$
$y=x^a$

$y = ax + b$

№174 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

Quyidagi vektorlarning qanday joylashgan $2) a(-2\sqrt{2},3), b(-4\sqrt{2},6)$
kollinear
kollinear emas.
Komplanar
O'zaro qarama qarshi yo'nalgan

№175 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

$A(1;1;6)$ va $B(2;1;0)$ nuqtalar orasidagi masofani toping
$\lvert AB\rvert = \sqrt{37}$
$\lvert AB\rvert = 35$
$\lvert AB\rvert = 12$
$\lvert AB\rvert = 2$

№176 Fan bobi -4; Fan bo'limi-5; Qiyinchilik darajasi-3

Aniq integralni hisoblang $\int_1^2 \frac{dx}{2x-1}$
$\frac{1}{2}\ln 3$
$\ln 3$
$\frac{1}{2}\ln 4$
$\frac{1}{3}\ln 3$

№177 Fan bobi -4; Fan bo'limi-1; Qiyinchilik darajasi-2

$y = \sqrt{5-x}$ Funksiyaning aniqlanish sohasini toping.

(-∞ ; 5]
(- ∞; 5)
(-5 ; + ∞)
[5; +∞)

№178 Fan bobi -4; Fan bo'limi-1; Qiyinchilik darajasi-1

Funksiyaning aniqlanish sohasini toping $y=a^x, \quad a>0, a\neq 1$
$(-\infty; +\infty)$
$(0;\infty)$
$x \geq 0$
$x \neq 1$

№179 Fan bobi -2; Fan bo'limi-1; Qiyinchilik darajasi-2

$x - y = 0$ to`g`ri chiziqnig burchak koeffitsientini toping.
1
2
3
-1

№180 Fan bobi -4; Fan bo'limi-5; Qiyinchilik darajasi-3

Aniq integralni hisoblang $\int_3^8 \frac{xdx}{\sqrt{x+1}}$
$\frac{32}{3}$
2
$-\frac{32}{3}$
-1

№181 Fan bobi -4; Fan bo'limi-6; Qiyinchilik darajasi-3

Quyidagi qatorlardan qaysi biri yaqinlashuvchi?
$\sum_{n=1}^{\infty}\frac{2^n}{1+7^n}$
$\sum_{n=1}^{\infty}\frac{n}{n+1}$
$\sum_{n=1}^{\infty}\frac{1}{n+2}$
$\sum_{n=1}^{\infty}\frac{1}{\sqrt{n}+n}$

№182 Fan bobi -4; Fan bo'limi-6; Qiyinchilik darajasi-3

Quyidagi qatorlardan qaysi biri uzoqlashuvchi?
$\sum_{n=1}^{\infty}\frac{1}{\sqrt{n}}$
$\sum_{n=1}^{\infty}\frac{1}{5^n}$
$\sum_{n=1}^{\infty}\frac{1}{\sqrt{n}+5^n}$
$\sum_{n=1}^{\infty}\frac{1}{n^2}$

№183 Fan bobi -2; Fan bo'limi-2; Qiyinchilik darajasi-3

$y=x^2$-6x+8 parabola va *Ox* o'qi bilan chegaralangan figura yuzini toping
$\frac{4}{3}$
$\frac{2}{3}$
4
2

№184 Fan bobi -2; Fan bo’limi-2; Qiyinchilik darajasi-2

$y = x^2$-6x+8 parabola va *Ox* o‘qi bilan chegaralangan figura yuzini toping
$\frac{32}{3}$
$\frac{2}{3}$
4
2

№185 Fan bobi -4; Fan bo’limi-3; Qiyinchilik darajasi-1

$y=(\log_a x)$ funksiya hosilasini toping
$(\log_a x)' = \frac{1}{x \ln a}$
$(\log_a x)' = \frac{1}{\ln a}$
$(\log_a x)' = \frac{a}{x \ln a}$
$(\log_a x)' = \frac{2}{x \ln a}$

№186 Fan bobi -4; Fan bo’limi-3; Qiyinchilik darajasi-1

$y=(\arcsin x)$ funksiya hosilasini toping
$(\arcsin x)' = \frac{1}{\sqrt{1-x^2}}$
$(\arcsin x)' = \frac{3}{\sqrt{1-x^2}}$
$(\arcsin x)' = \frac{x}{\sqrt{1-x^2}}$
$(\arcsin x)' = \frac{4}{\sqrt{1-x^2}}$

№187 Fan bobi -4; Fan bo'limi-3; Qiyinchilik darajasi-1

$y=(\arccos x)$ funksiya hosilasini toping
$(\arccos x)' = -\frac{1}{\sqrt{1-x^2}}$
$(\arccos x)' = \frac{1}{\sqrt{1-x^2}}$
$(\arccos x)' = -\frac{x}{\sqrt{1-x^2}}$
$(\arccos x)' = -\frac{1}{\sqrt{1+x^2}}$

№188 Fan bobi -4; Fan bo'limi-3; Qiyinchilik darajasi-1

$y=(arcctgx)$ funksiya hosilasini toping
$(arcctgx)' = -\frac{1}{1+x^2}$
$(arcctgx)' = \frac{1}{1+x^2}$
$(arcctgx)' = -\frac{1}{1-x^2}$
$(arcctgx)' = -\frac{2}{1+x^2}$

№189 Fan bobi -4; Fan bo'limi-2; Qiyinchilik darajasi-1

Quyidagi ketma ketlik xadlarini toping {2n +3}
5, 7, 9, 11, 13…
3, 5, 7, 9, 11 …
5, 6, 7, 8, 9…
2,4,6,8,10…

№190 Fan bobi -4; Fan bo'limi-2; Qiyinchilik darajasi-1

Quyidagi ketma ketlik xadlarini toping {2n +1}
3,5, 7, 9, 11, 13…
4,5,6,7,8,9……
5, 6, 7, 8, 9…
2,4,6,8,10…

№191 Fan bobi -4; Fan bo'limi-5; Qiyinchilik darajasi-2

$\int_{-1}^{1} dx$
2
$\frac{1}{2}+c$
5
0

№192 Fan bobi -4; Fan bo'limi-3; Qiyinchilik darajasi-3

$y=(0,5x+3)^{-10}$ funksiyaning ning hosilasini toping
$-5(0,5x+3)^{-11}$
$-5(0,5x+3)^{-9}$
$-10(0,5x+3)^{-11}$
$-2(0,5x+3)^{-11}$

№193 Fan bobi -4; Fan bo'limi-4; Qiyinchilik darajasi-2

$\int \frac{dx}{x^2}=$
$-\frac{1}{x}+c$
c
$x+c$
x

№194 Fan bobi -4; Fan bo’limi-5; Qiyinchilik darajasi-2

$\int_{-1}^{0} (x+1)dx$ integralni hisoblang
$\frac{1}{2}$
$\frac{\sin^2}{2}+x$
$-\frac{1}{2}$
0

№195 Fan bobi -4; Fan bo’limi-5; Qiyinchilik darajasi-2

$\int_{0}^{1} 6x^5 dx$
1
$\frac{1}{2}+c$
$-\frac{1}{2}$
2

№196 Fan bobi -4; Fan bo’limi-5; Qiyinchilik darajasi-2

$\int_{0}^{1} 7x^6 dx$
1
$\frac{1}{2}+c$
$-\frac{1}{2}$
2

№197 Fan bobi -4; Fan bo’limi-5; Qiyinchilik darajasi-2

$\int_0^1 2\,x\,dx$
1
$\frac{1}{2}+c$
$-\frac{1}{2}$
2

№198 Fan bobi -4; Fan bo'limi-4; Qiyinchilik darajasi-2

$\int \frac{dx}{x} = ?$
$\ln\|x\|+C$
$\sin x+C$
e^x+C
$-\cos x+C$

№199 Fan bobi -4; Fan bo'limi-4; Qiyinchilik darajasi-2

$\int e^{2x}dx=?$
$\frac{1}{2}e^{2x}+C$
$\sin x+C$
e^x+C
$-\cos x+C$

№200 Fan bobi -4; Fan bo'limi-1; Qiyinchilik darajasi-2

$y=\|x\|$ funktsiyaning qiymatlari to`plami
$[0;+\infty)$
$(0;\infty)$

$(-\infty; +\infty)$
$[-1; 1]$

1-bob. To‘plamlar nazariyasiga kirish va matematik mantiq elementlari

1 “Matematika” faniga kirish

2. To’plamlar va ular ustida amallar

3. Matematuk mantiq elementlari.

4. Munosabatlar.

5. Graflar.

2-bob. Analitik geometriya elementlari

1. Tekislikda analitik geometriya

2. Ikkinchi tartibli egri chiziqlar

3. Fazoda analitik geometriya

4. Ikkinchi tartibli sirtlar.

3-bob. Tekislikda yasashga doir masalalar va ularni yechish metodlari.

1. Tekislikdagi geometrik yasashlarning turli metodlari.

2. Tasvirlash metodlari. Proektiv fazo.

3. Proektiv geometriya elementlari.

4-bob. Matematik tahlilning asosiy tushunchalari va metodlari

1. Limitlar.
2. Funksiya hosilasi.

3. Boshlang’ich funksiya.

4. Aniq integral.

5. Qatorlar.

6. Differensial tenglamalar

5-bob. Kombinatorika, ehtimolliklar nazariyasi va matematik statistika. Matematik modellar va algoritmlar

1. Kombinatorika elementlari.

2. Ehtimollar nazariyasi va matematik statistika