TASDIQLAYMAN
O‘quv-uslubiy bo‘lim boshlig‘i
_____ I.Madatov
2024-yil 19-oktabr

Samarqand davlat universitetining Kattaqo‘rg‘on filiali Aniq va tabiiy fanlar fakulteti 4-bosqich Axborot tizimlari va texnologiyalari yo‘nalishi talabalariga 7-semestr uchun « Kompyuterli matematik tizimlar » fanidan yakuniy nazorat savollari

Imtihon shakli: amaliy

Savolning tartib raqami	Savolning qiyinlik darajasi	Savolning qanday mashg’ulotga tegishliligi	Mavzu nomeri	Savol matni
1.	1	A	3-6	$(a+b+2)\cdot(a+b)-(a-b)^2+1$, $a^5+a^4-2a^3-2a^2+a+1$, $(a+b)(a+b+2)-(a-b)(a-b-2)$ Ushbu ifoda uchun Ishchi varaqni hujjatlashtiring hamda ko‘paytuvchilarga ajrating.
2.	1	A	3-6	$(x^2+9)^2-36x^2$, $1-(8a-3)^2$, x^4+x^2+1 Ushbu ifoda uchun Ishchi varaqni hujjatlashtiring hamda ko‘paytuvchilarga ajrating.
3.	2	A	3-6	$b^2+ab-2a^2-b+a$, $2a^2b-3a+10ab^2-15b$, $(x-y)^3-(z-y)^3+(z-x)^3$ Ushbu ifoda uchun Ishchi varaqni hujjatlashtiring hamda ko‘paytuvchilarga ajrating.
4.	2	A	3-6	add, mul, select, remove komandalarini ishlash jarayonini namoyish qiling hamda ishchi varaqni hujjatlashtiring.

5.	2	A	3-6	zip, sort, rhs, lhs, numer, denom komandalarini ishlash jarayonini namoyish qiling hamda ishchi varaqni hujjatlashtiring.
6.	2	A	3-6	select remove, has, subs, convert komandalarini ishlash jarayonini namoyish qiling hamda ishchi varaqni hujjatlashtiring.
7.	2	A		eval, evalm, evalf komandalarini ishlash jarayonini namoyish qiling hamda ishchi varaqni hujjatlashtiring.
8.	2	A	3-6	normal, round, floor, ceil komandalarini ishlash jarayonini namoyish qiling hamda ishchi varaqni hujjatlashtiring.
9.	2	A	3-6	abs, ceil, frac, trunc komandalarini ishlash jarayonini namoyish qiling hamda ishchi varaqni hujjatlashtiring.
10.	1	A	3-6	degree, ldegree, coeff, coeffs komandalarini ishlash jarayonini namoyish qiling hamda ishchi varaqni hujjatlashtiring.
11.	1	A	3-6	lcoeff, tcoeff, isprime, irem komandalarini ishlash jarayonini namoyish qiling hamda ishchi varaqni hujjatlashtiring.
12.	2	A	3-6	iquo, ifactor, lcm, igcd komandalarini ishlash jarayonini namoyish qiling hamda ishchi varaqni hujjatlashtiring.
13.	2	A	3-6	rationalize, map, combine komandalarini ishlash jarayonini namoyish qiling hamda ishchi varaqni hujjatlashtiring.
14.	1	A	3-6	seq, $, has komandalarini ishlash jarayonini namoyish qiling hamda ishchi varaqni hujjatlashtiring.
15.	1	A	7	$\left(18\frac{1}{3}+x\right):3\frac{1}{7}=7$ chiziqli tenglamani yeching hamda ishchi varaqni hujjatlashtiring.
16.	2	A	7	$\frac{3x-11}{4}-\frac{3-5x}{8}=\frac{x+6}{2}$ chiziqli tenglamani yeching hamda ishchi varaqni hujjatlashtiring.

17.	1	A	7	$0,7(6y-5)=0,4(y-3)-1,16$ chiziqli tenglamani yeching hamda ishchi varaqni hujjatlashtiring.
18.	2	A	7	$(x+2\frac{22}{25}):7\frac{1}{3}=3$ chiziqli tenglamani yeching hamda ishchi varaqni hujjatlashtiring.
19.	2	A	7	$6-\frac{x-1}{2}=\frac{3-x}{2}+\frac{x-2}{3}$ chiziqli tenglamani yeching hamda ishchi varaqni hujjatlashtiring.
20.	2	A	7	$0,9(4x-2)=0,5(3x-4)+4,4$ chiziqli tenglamani yeching hamda ishchi varaqni hujjatlashtiring.
21.	2	A	7	$(x+3\frac{2}{9}):4\frac{1}{6}=6$ chiziqli tenglamani yeching hamda ishchi varaqni hujjatlashtiring.
22.	2	A	7	$\left(3\frac{19}{22}+x\right):4\frac{1}{5}=5$ chiziqli tenglamani yeching hamda ishchi varaqni hujjatlashtiring.
23.	3	A	7	$2,8x-3(2x-1)=2,8-3,19x$ chiziqli tenglamani yeching hamda ishchi varaqni hujjatlashtiring.
24.	1	A	7	$\left(\frac{1}{3}+x\right):7=\left(\frac{3}{4}+x\right):9$ chiziqli tenglamani yeching hamda ishchi varaqni hujjatlashtiring.
25.	1	A	7	$\left(4\frac{3}{8}x+5\frac{1}{16}\right)\cdot\frac{4}{15}=\frac{5}{12}x+2\frac{2}{5}$ chiziqli tenglamani yeching hamda ishchi varaqni hujjatlashtiring.

26.	1	A	7	$x^2 - 13x + 36 = 0$ kvadrat tenglamani yeching hamda ishchi varaqni hujjatlashtiring.
27.	1	A	7	$x - 6 = \frac{13}{x}$ kvadrat tenglamani yeching hamda ishchi varaqni hujjatlashtiring.
28.	2	A	7	$x^2 - 18x + 45 = 0$ kvadrat tenglamani yeching hamda ishchi varaqni hujjatlashtiring.
29.	1	A	12	$\begin{cases} 3x - 2y = -8 \\ x + 3y = 1 \end{cases}$ tenglamalar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.
30.	1	A	12	$\begin{cases} 2x - 3y = 5 \\ 3x + y = 2 \end{cases}$ tenglamalar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.
31.	1	A	12	$\begin{cases} x + y = 5 \\ x - y = -1 \end{cases}$ tenglamalar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.
32.	2	A	12	$\begin{cases} 2x + y - 8 = 0 \\ 3x + 4y - 7 = 0 \end{cases}$ tenglamalar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.
33.	2	A	12	$\begin{cases} \frac{x}{4} + \frac{y}{4} = 2 \\ \frac{x}{6} + \frac{y}{3} = 2 \end{cases}$ tenglamalar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.

34.	2	A	12	$\begin{cases} \frac{2x+5y}{y}=31 \\ \frac{x-2y}{y}=11 \end{cases}$ tenglamalar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.
35.	2	A	12	$\begin{cases} x+2y-3=0 \\ 2x-3y+8=0 \end{cases}$ tenglamalar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.
36.	3	A	12	$\begin{cases} \frac{x+y}{2}-\frac{2y}{3}=\frac{5}{2} \\ \frac{3x}{2}+2y=0 \end{cases}$ tenglamalar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.
37.	3	A	12	$\begin{cases} \frac{3x-y+2}{7}+\frac{x+4y}{2}=4 \\ \frac{3x-y+2}{7}-\frac{x+4y}{3}=-1 \end{cases}$ tenglamalar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.
38.	1	A	12	$\begin{cases} x^2+y^2-2xy=1 \\ x+y=3 \end{cases}$ tenglamalar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.
39.	1	A	12	$\begin{cases} x+y=3 \\ x^2-y^2=6 \end{cases}$ tenglamalar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.
40.	1	A	12	$\begin{cases} x^2-y^2-3x=12 \\ x-y=0 \end{cases}$ tenglamalar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.

41.	1	A	7	$\frac{1-x}{2}+3<3x-\frac{2x+1}{4}$ tengsizlikni yeching hamda ishchi varaqni hujjatlashtiring.
42.	2	A	7	$(x+1)^2>(x+2)^2$ tengsizlikni yeching hamda ishchi varaqni hujjatlashtiring.
43.	2	A	7	$8+\frac{6x-8}{10}>\frac{x-2}{6}+\frac{1-5x}{8}+\frac{1}{4}$ tengsizlikni yeching hamda ishchi varaqni hujjatlashtiring.
44.	1	A	7	$1-\frac{17-3x}{2}>1,5x$ tengsizlikni yeching hamda ishchi varaqni hujjatlashtiring.
45.	1	A	7	$\frac{2x-7}{6}+\frac{7x-2}{3}<3-\frac{1-x}{2}$ tengsizlikni yeching hamda ishchi varaqni hujjatlashtiring.
46.	1	A	12	$\begin{cases} 2x-3(x-5)>10-3x \\ x(x+2)-4\le(x-1)^2+7 \end{cases}$ tengsizliklar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.
47.	1	A	12	$\begin{cases} 4(x-3)-3>8x+1 \\ 2+x(x+3)\le(x+2)^2+5 \end{cases}$ tengsizliklar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.
48.	1	A	12	$\begin{cases} 7x+3\le9x-1 \\ 20-3x\ge4x-15 \end{cases}$ tengsizliklar sistemasini yeching hamda ishchi

				varaqni hujjatlashtiring.
49.	2	A	12	$\begin{cases} x(x+1)+10>(x+1)^2+3 \\ 3x-4(x-7)\geq 16-3x \end{cases}$ tengsizliklar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.
50.	1	A	12	$\begin{cases} \frac{y-5}{4}<\frac{2y+3}{3} \\ \frac{4y+1}{2}<\frac{y-4}{3} \end{cases}$ tengsizliklar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.
51.	1	A	12	$\begin{cases} \frac{x-1}{4}\leq\frac{x}{5} \\ \frac{x}{3}>\frac{x+4}{7} \end{cases}$ tengsizliklar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.
52.	1	A	12	$\begin{cases} \frac{3x-2}{4}>\frac{1-5x}{6} \\ 3x-1\leq 3-2x \end{cases}$ tengsizliklar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.
53.	2	A	12	$\begin{cases} x(9x-5)\geq(1-3x)^2 \\ \frac{5x-3}{12}+\frac{7-2x}{8}\leq 1\frac{1}{3} \end{cases}$ tengsizliklar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.
54.	2	A	12	$\begin{cases} 0,5(2x-5)>\frac{2-x}{2}+1 \\ 0,2(3x-2)+3>\frac{4x}{3}-0,5(x-1) \end{cases}$ tengsizliklar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.
55.	2	A	12	$\begin{cases} (x+2)(2-x)<(x+3)(4-x). \\ \frac{3+x}{4}+\frac{1-2x}{6}\geq 1 \end{cases}$ tengsizliklar sistemasini yeching hamda ishchi varaqni hujjatlashtiring.

56.	2	A	8	$\frac{sin^2x+sinx}{cosx}=0$ tirgonometrik tenglamani yeching hamda ishchi varaqni hujjatlashtiring.
57.	2	A	8	$\frac{1-tg\frac{x}{2}}{1-ctg\frac{x}{2}}=2sin\frac{x}{2}$ tirgonometrik tenglamani yeching hamda ishchi varaqni hujjatlashtiring.
58.	2	A	8	$\lvert tgx+ctgx\rvert=\frac{4}{\sqrt{3}}$ tirgonometrik tenglamani yeching hamda ishchi varaqni hujjatlashtiring.
59.	1	A	8	$\frac{cos^2x-cosx}{sinx}=0$ tirgonometrik tenglamani yeching hamda ishchi varaqni hujjatlashtiring.
60.	1	A	8	$ctgx+\frac{sinx}{1+cosx}=2$ tirgonometrik tenglamani yeching hamda ishchi varaqni hujjatlashtiring.
61.	1	A	8	$\frac{cos3x}{sin3x-2sinx}=tgx$ tirgonometrik tenglamani yeching hamda ishchi varaqni hujjatlashtiring.
62.	3	A	8	$cos4x+\frac{10tgx}{1+tg^2x}=3$ tirgonometrik tenglamani yeching hamda ishchi varaqni hujjatlashtiring.
63.	3	A	8	$\frac{cos2x}{\frac{\sqrt{2}}{2}+sinx}=0$ tirgonometrik tenglamani yeching hamda ishchi varaqni hujjatlashtiring.

64.	3	A	8	$2sin2x \geq ctg\frac{\pi}{4}$ tirgonometrik tengsizlikni yeching hamda ishchi varaqni hujjatlashtiring.
65.	3	A	8	$sinx \cdot cosx > \frac{\sqrt{2}}{4}$ tirgonometrik tengsizlikni yeching hamda ishchi varaqni hujjatlashtiring.
66.	2	A	8	$sin5x \cdot cos4x + cos5x \cdot sin4x > \frac{1}{2}$ tirgonometrik tengsizlikni yeching hamda ishchi varaqni hujjatlashtiring.
67.	2	A	8	$cos^2x < \frac{\sqrt{2}}{2} + sin^2x$ tirgonometrik tengsizlikni yeching hamda ishchi varaqni hujjatlashtiring.
68.	2	A	8	$1 - 2cos2x > sin^2 2x$ tirgonometrik tengsizlikni yeching hamda ishchi varaqni hujjatlashtiring.
69.	1	A	8	$1 - 2sin4x < cos^2 4x$ tirgonometrik tengsizlikni yeching hamda ishchi varaqni hujjatlashtiring.
70.	2	A	8	$sin^2 3x - cos^2 3x \leq -\frac{\sqrt{3}}{2}$ tirgonometrik tengsizlikni yeching hamda ishchi varaqni hujjatlashtiring.
71.	1	A	8	$cos^2x - \frac{5}{2}cosx + 1 \leq 0$ tirgonometrik tengsizlikni yeching hamda ishchi varaqni hujjatlashtiring.
72.	1	A	9	$f(x) = -x + \frac{x^2}{2}$ berilgan funksiyaning differensialini hisoblang hamda ishchi varaqni hujjatlashtiring.

73.	1	A	9	$y=\frac{3}{sin^2x}+5$ berilgan funksiyaning differensialini hisoblang hamda ishchi varaqni hujjatlashtiring.
74.	1	A	9	$f(x)=1+\frac{1}{cos^24x}$ berilgan funksiyaning differensialini hisoblang hamda ishchi varaqni hujjatlashtiring.
75.	1	A	9	$1+\frac{1}{sin^24x}$ berilgan funksiyaning differensialini hisoblang hamda ishchi varaqni hujjatlashtiring.
76.	1	A	9	$2(2x+5)^4$ berilgan funksiyaning differensialini hisoblang hamda ishchi varaqni hujjatlashtiring.
77.	1	A	9	$f(x)=\frac{1}{sin^2(3x+1)}$ berilgan funksiyaning differensialini hisoblang hamda ishchi varaqni hujjatlashtiring.
78.	1	A	9	$F(x)=\frac{1}{2}x^2+cosx$ berilgan funksiyaning differensialini hisoblang hamda ishchi varaqni hujjatlashtiring.
79.	2	A	9	$f(x)=\frac{1}{cos^2(\frac{x}{3}+1)}$ berilgan funksiyaning differensialini hisoblang hamda ishchi varaqni hujjatlashtiring.
80.	2	A	9	$f(x)=3x^2-2cos(2x+\frac{\pi}{3})$ berilgan funksiyaning differensialini hisoblang hamda ishchi varaqni hujjatlashtiring.
81.	2	A	9	$y=\frac{2x}{(x^2+1)ln10}$ berilgan funksiyaning differensialini hisoblang hamda ishchi varaqni hujjatlashtiring.
82.	3	A	10	$\int_0^{e^2-1}\frac{dx}{x+1}$ integralni hisoblang hamda ishchi varaqni hujjatlashtiring.

83.	3	A	10	$\int_0^2 (1-2x)^2 dx$ integralni hisoblang hamda ishchi varaqni hujjatlashtiring.
84.	3	A	10	$\int_{-1}^0 (2x+1)^2 dx$ integralni hisoblang hamda ishchi varaqni hujjatlashtiring.
85.	2	A	10	$\int_{\frac{\pi}{4}}^{\frac{\pi}{2}} (1+ctg^2 x)dx$ integralni hisoblang hamda ishchi varaqni hujjatlashtiring.
86.	2	A	10	$\int_0^{\frac{\pi}{4}} sin2xdx$ integralni hisoblang hamda ishchi varaqni hujjatlashtiring.
87.	2	A	10	$\int_{-1}^0 (1+3x)^2 dx$ integralni hisoblang hamda ishchi varaqni hujjatlashtiring.
88.	2	A	10	$\int_0^{ln3} (e^{2t} - e^{-\frac{1}{2}})dt$ integralni hisoblang hamda ishchi varaqni hujjatlashtiring.
89.	2	A	10	$\int_0^{2\pi} cos2x \cdot cos7xdx$ integralni hisoblang hamda ishchi varaqni hujjatlashtiring.
90.	2	A	10	$\int_{-\pi/2}^{-\pi/4} \frac{dx}{cos^2(\frac{\pi}{2}+x)}$ integralni hisoblang hamda ishchi varaqni

				hujjatlashtiring.
91.	2	A	12	$y=\frac{\sin x}{x}$ funksiyaning grafigini -4π dan 4π gacha bo'lgan intervalda qalin chiziq bilan yasang hamda ishchi varaqni hujjatlashtiring.
92.	2	A	12	$y=\frac{x}{x^2-1}$ uzlukli funksiyaning grafigini yasang hamda ishchi varaqni hujjatlashtiring.
93.	2	A	12	$y=\sin 2t$, $x=\cos 3t$, $0\le t\le 2\pi$ parametrik berilgan egri chiziqlarning grafigini ramkada chizing hamda ishchi varaqni hujjatlashtiring.
94.	2	A	12	Quyidagi ikkita grafikni bitta rasmda yasang: $y=\ln(3x-1)$ funksiyaning grafigi va unga urinuvchi $y=\frac{3}{2}x-\ln 2$ funksiyaning grafigini yasang hamda ishchi varaqni hujjatlashtiring.
95.	2	A	12	Aniqmas funksiya grafigining yasang(giperbola): $\frac{x^2}{4}-\frac{y^2}{2}=16$.
96.	2	A	12	$\frac{x^2}{16}+\frac{y^2}{4}=1$ ellips ichida berilgan $x=4\cos^3 t$, $x=2\sin^3 t$ $(0\le t\le 2\pi)$ astroida grafigini bitta rasmda yasang.