**10−sinf I−variant**

1. $2x^{2}-2ax+1=0$ kvadrat tenglama ildizlari uchun

$$\left(\frac{2x\_{1}}{x\_{1}+x\_{2}+1}\right)^{2}+\left(\frac{2x\_{2}}{x\_{1}+x\_{2}+1}\right)^{2}=3$$

tengliko`rinlibo`lsa, a ni toping.

A) 1 B) −3 C) −1 D) 7

2. Korxonaxom−ashyuoqimmatlashganisabablimaxsulotnarxi 20% gaoshirildi, biroqmijojlarsoni 20 % gakamayibketdi. Shundakorxonanarxniqanchadirfoizgakamaytiribmijozlarisonini 25% gaoshirishgaerishdi. Shundankeyinkorxonatushuminarxo`zgarmasdanoldingitushumgaqaraganda 8% gaoshganbo`lsa, yanginarxnechafoizgakamaytirilgan?

A)10 B) 20 C) 12 D) 4

3) { x/xϵN, x2< 32 } to’plamninechtausulbilanikkitakesishmaydiganqismto’plamlarbirlashmasiko’rinishidaifodalashmumkin?
A) *5* B) *31* C) *32* D) *16*

4. $\left|\frac{5}{2x-6}\right|>\frac{7}{9}$ tengsizlik yechimi bo`la oladigan tub sonlar nechta?

A) 3 B) 4 C) 2 D) 5

5. Berilganfunksiyagateskarifunksiyanianiqlang.$f\left(x\right)=x^{2f^{2}\left(x\right)+f(x)}$

A) $f^{-1}\left(x\right)=x^{\frac{1}{2x^{2}+x}}$ B$) f^{-1}=x^{2x^{2}+x}$C) $f^{-1}(x)=x^{x^{2}+2x}$ D) aniqlab bo`lmaydi.

6. Ko`paytmanihisoblang.$cos12^{o}cos24^{o}cos36^{o}cos48^{o}cos60^{o}cos72^{o}cos84^{o}$

A) 1/128 B) 1/16 C) 1/32 D) 1/64

7) Tenglamaning ildizini nimchoragi nechaga teng ?



A) 0,125 B) 0,5 C)0,25 D) 

8) Hisoblang: $cos\frac{4π}{7}∙cos\frac{5π}{7}∙cos\frac{8π}{7}$

A) − $\frac{1}{8}$ B) −$\frac{1}{4}$ C) $\frac{1}{8}$ D) $\frac{1}{4}$

9)$y=\sqrt[4]{\frac{7-x}{\sqrt[6]{4x^{2}-19x+12}}}$ funksiyaning aniqlanish sohasini toping.

A) $\left[\frac{3}{4};7\right]$

B) $\left(\frac{3}{4};4\right)$

C)$\left(-\infty ;\frac{3}{4}\right)∪\left(4;\right.\left.7\right]$

D) $\left(\frac{3}{4};7\right)$

10) $\left[2x-1\right]=x$ tenglamani butun yechimlar sonini toping. Bu yerda $\left[a\right]$− a soniningbutunqismi.

A) 3 ta B) 4ta C) 1 ta D) 2 ta

11) x$=\frac{\sqrt{11}+1}{2}$ bo`lsa, $\frac{x^{3}-3x^{2}+6,5x-2}{x^{2}-x+1}$ kasrning qiymatini hisoblang.

A) 2−$\sqrt{11}$ B) $\sqrt{11}$−2 C) $\sqrt{11}-1$ D) $\sqrt{11}+1$

12) Agar f(g(x))=$x^{2}-6x+6$ va f(x)=x−3 funksiyalar berilgan bo`lsa, g(x) funksiya ko`rinishini aniqlang.

A) (x−3)2 B) x2+12x+3

C) x2−12x−3 D) (x+3)2

13) Uchburchakningtomonlari 7 va 11 ga, uchinchitomoniningmedianasi gat eng.Uchburchakninguchunchitomonini toping.

A) 12 B) 14 C) 15 D) 16

14) Ta`lim muassasida barcha o`quvchilar kamida bitta ingliz yoki nemis tilida so`zlash oladilar. Ayrimlari ikkala tilni ham biladilar.O`quvchilarning 85%i ingliz tilini, 75%i nemis tilini biladilar. Ikkala tilni ham biladigan o`quvchilar barcha o`quvchilarning necha % ini tashkil etadi.

A) 50% B) 60% C) 70 % D) 65%

15) 7(kx−2)=7k+2(x−8) tenglama k ning qanday qiymatlarida ildizga ega bo`lmaydi?

A) (−∞; 2/7) B) (2/7; ∞) C) k=$\frac{2}{7}$ D) $∅$

16) tengsizlikniyeching.$log\_{\sqrt{3}}\left(2x-1\right)<log\_{\sqrt{3}}\left(x^{2}+6x+9\right)$

A) $\left(\frac{2}{3};2\right)$ B) $\left(\frac{5}{3};2\right)$ C) $\left(\frac{1}{2};\infty \right)$ D) $\left(\frac{4}{3};3\right)$

17) 3cos2x-3$\sqrt{3}$sin2x=0 trigonometrik tenglamani yeching.

A$) \frac{π}{12}+\frac{πk}{2}; k\in Z$)

$$B) \frac{π}{6}+πk; k\in Z$$

$$C)\frac{π}{12}+2πk; k\in Z$$

D) $\frac{π}{12}+πk; k\in Z$

18) $\frac{1+cos3α+cos2α+cosα}{2cos^{2}α+cosα-1}$ ifodani soddalshtiring.

A) cosα B) 1 C) 2cosα D) 2sinα

19 ) Hisoblang: cos25ocos35ocos85o=

A) $\frac{\sqrt{2-\sqrt{3}}}{16}$ B) $\frac{\sqrt{2-\sqrt{3}}}{8}$C) $\frac{\sqrt{2+\sqrt{3}}}{16}$ D) $\frac{\sqrt{2+\sqrt{3}}}{8}$

20) Uchburchakning ikkita burchagi mos ravishda 38o va 52oga teng. Uchinchi burchagi uchidan tushirilgan bissektrisa va mediana orasidagi burchakni toping.

A) 10oB) 17o C) 7o D) 14o

21) Agar f(x+1) =7+3x funksiyauchun f (a)=2 tengliko`rinlibo`lsa, a ningqiymatini toping.

 A) 10 B) 12 C) −2/3 D) 8

22) Beshta a1, a2, a3, a4, a5 tub sonlarayirmasi 6 gatengbo`lganarifmetikprogressiyanitashkilqiladi. 2a2+a3ni toping.

A) 31 B) 40 C) 39 D) 43

23) Agar$x^{2}\left(a^{2}+b^{2}+9\right)+2\left(a+b+3\right)x+3=0$ tenglama haqiqiy yechimga ega bo`lsa, a+b ni toping.

A) 3 B) 6 C) 4 D) 2

24) Uchburchakningikkitomoni 12 va 13 smga, ularorasidagiburchakkosinusi$\frac{5}{13 }$ ga teng bo`lsa,uning yuzini toping.

A) 70 B) 71 C) 72 D) 60

25)$ f\left(x\right)=x^{2}-4x$ va $f\left(x\right)=-2x^{2}+8x-p$ funksiyalar umumiy uchga ega bo`lsa, p ning qiymatini toping.

A) 24 B) 12 C) 6 D) 18

**10−sinf II−variant**

1) Agar $\overbar{bcd}$, $\overbar{cdb}$, $\overbar{dbc}$ uch xonali natural sonlar yig’indisi 777 ga teng bo’lsa, 𝑏 + 𝑐 + 𝑑 ni toping.

A**)** 7 B)6 C)8 D)2

2) Birinchi quvurdan ikkinchi quvurga qaraganda ikki barobar ko’p suv oqadi.Ikkalasi birgalikda bo’sh hovuzni 12 soatda to’ldiradi.Birinchi quvur hovuzning uchdan bir qismini necha soatda to’ldiradi?

A) 9 B) 4 C) 12 D) 6

3) ($y^{2}+y)+$ ($y^{2}+2y)+$($y^{2}+3y)+…+$($y^{2}++17y)=1904$

tenglamaniqanoatlantiruvchi y natural sonni toping.

A)3 B)4 C)16 D)7

4) Agar a natural sonni 64 gabo’lgandabo’linma n, qoldiq n3gatengbo’lsa, a soniningengkattaqiymatini toping.

A) 64 B)136 C) 219 D)262

5) $\left|2-x\right|+3x\leq 5$ tengsizlikni yeching

A) x≤1,5 B) x$\geq 2$ C) x≥3 D) x≤−1

6) y= sin5x∙cos9x−cox5x∙sin9x funksiyaningengkichikmusbatdavrini toping.

A) 2π B) π C) π/2 D) 4π

7) Uchburchakning 6 va 8 gatengmedianalario’zaro 90oburchakostidakesishadi. Uchburchakninguchinchi

tomonigao’tkazilganmedianauzunligini toping.

A)10 B)5 C)15 D)20

8) Tog’riburchakliuchburchakningo’tkirburchagi 600ga, gipotenuzasigatushirilganbalandligi 18 gateng. Berilganuchburchakningkattakatetini toping.

A)  B)  C)36 D) 

9) Tengyonli trapetsiyaning diagonali $\sqrt{3}$ sm ga teng va asosi bilan 15o li burchak tashkil qiladi. Trapetsiya yuzini toping.

A) 0,5 B) 0,75 C) 0,25 D) 1,5

10) Agar $\sqrt{tgβ-\sqrt{tgβ-\sqrt{tgβ-…}}}=1$bo’lsa cos2𝛽 ning qiymatini toping.

A)−0.6 B) −0.8 C) 0.96 D) 0.28

11) log210lg8 dan katta bo`lmagan natural sonlar nechta?

A) 3 B) 4 C) 1 D) 2

12) y=kx2−4(k2−2k)x+2 parabolaning uchi x−3k=0 to`g`ri chiziqda bo`lsa, k=?

A) 4 B) −3 C) −4 D) 3

13) Aylananing AB va CD vatarlari E nuqtada kesishadi.AE=5sm, BE=2dm va EC=2,5sm bo`lsa, ED ninguzunligini toping.(sm)

A) 40 B) 3 C) 400 D) 4

14) $\left|x^{2}-9x+15\right|=7$ tenglama yechimlari yig`indisini toping.

A) 7 B) 8 C) −7 D) 9

15) Akvariumningboyi 70sm, eni 40sm, balandligi 30sm. Akvariumdagisuvsathiyuqoridan 10 sm past bo`lishiuchununganechalitrsuvsolishkerak?

1. 560 B) 56 C) 84 D) 840

16) Agar$x^{2}\left(a^{2}+b^{2}+9\right)+2\left(a+b+3\right)x+3=0$

tenglama haqiqiy yechimga ega bo`lsa, a+b ni toping.

A) 3 B) 6 C) 4 D) 2

17) $\frac{sin2α-tgα}{tgα∙cos2α}$ ifodani soddalashtiring.

A) 1+tgα B) 1 C) tg2α D) 2

18) $\frac{0,625∙6,75^{2}-3,25^{2}∙0,625}{\sqrt{2,75^{2}+7∙2,75+3,5^{2}}}$ ni hisoblang

A) 0,35 B) 350 C) 3,5 D) 35

19) Agar f(g(x))=$x^{2}-6x+6$ va f(x)=x−3 funksiyalar berilgan bo`lsa, g(x) funksiya ko`rinishini aniqlang.

A) (x−3)2 B) x2+12x+3

C) x2−12x−3 D) (x+3)2

20) Uchburchakning ikki tomoni 10 va 16 ga , ular orasidagi burchak $60^{o}$ ga teng. Shu uchburchakka ichki chizilgan aylana radiusini toping.

A) 4$\sqrt{3}$ B) $\sqrt{3}$ C) 3$\sqrt{3}$ D) 2 $\sqrt{3 }$

21)$\left\{\begin{array}{c}\frac{sin\frac{π}{2}}{a}+\frac{4}{b}=\frac{1}{2}\\\frac{2cos2π}{a}+\frac{3}{b}=\frac{4}{5}\end{array}bo`lsa, b=?\right.$

A) 17 B) 134 C)25 D)50

22) Radiusi 6 ga teng bo`lgan doiradan markaziy burchagi $60^{o}$ ga teng bo`lgan doiraviy sektor qirqib olindi va unga aylana ichki chizildi, ya`ni aylana sektor tomonlariga va yoyiga urinadi. Shu aylanaga tasgqi chizilgan kvadrat yuzini aniqlang.

A) 10 B) 16 C) 8 D)12

23) $z=tg\frac{3π}{7}$, y = $sin\frac{π}{6}$, x=$\frac{5π}{7}$ sonlar uchun quyidagi munosabatlardan qaysi biri o`rinli?

A) y>x>z B) x>y>z C) x>z>y D) z>x>y

24) ABCD parallelogramda E nuqta AD tomonning o`rtasi, F nuqta CE to`g`ri chiziqqa B nuqtada tushurilgan perpendikularning asosi. Agar AB=2$\sqrt{3}$ va <BAF=55o bo`lsa, ABF uchburchak yuzini toping.

A) 5 sin55o B) 6 sin55o

C) 3 sin55o D) 4 sin55o

25)$\left|\vec{a}\right|=\sqrt{6}, \left|\vec{b}\right|=\sqrt{8}$va ular orasidagi burchak $φ=\frac{π}{6}$ bo`lsa, $\left(3\vec{a}-2\vec{b}\right)$vektorning uzunligi topilsin.

A) 30 B) 14 C) $\sqrt{14}$ D) 3