

## DEMO TEST(1)

1. Hisoblang:  $\frac{58,4 \cdot 31,2 - 27,2}{31,2 + 58,4 \cdot 30,2}$

A) 1 B)  $\frac{1}{2}$  C)  $\frac{1}{4}$  D) 2

2. Agar  $1 + \frac{1}{2} + \frac{1}{3} + \dots + \frac{1}{10} = S$  bo'lsa,  $S$  qaysi oraliqqa tegishli?

A)  $\left(\frac{23}{10}, \frac{25}{6}\right)$  B)  $\left(\frac{15}{11}, \frac{23}{11}\right)$  C) (6,7) D)  $\left(\frac{35}{6}, \frac{47}{6}\right)$

3.  $A(4,6)$ ,  $B(2,1)$ ,  $C(6,1)$  nuqtalarni tutashtirishdan hosil bo'ladigan uchburchak yuzini toping.

A) 15 B) 8 C) 10 D) 20

4. To'g'ri burchakli uchburchak katetlari o'zaro 3:4 nisbatda, gipotenuzasi 15 sm ga teng. Uchburchakning kichik katetini toping.

A) 20 B) 10 C) 9 D) 15

5.  $f(x) = x^8 - \cos 3x$  bo'lsa,  $f'(x) = ?$

A)  $8x^7 + 3\sin 3x$  B)  $\frac{x^9}{9} - 3\sin 3x$  C)  $8x^7 - \frac{1}{3}\sin 3x$  D)  $8x^7 - 3\sin 3x$

6.  $x^2 + x - 2 = \frac{x^2 + x - 2}{x^2 - 1}$  tenglamaning ildizlari ko'paytmasini toping.

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

7.  $f(x-3) = \frac{2x-1}{x+1}$  bo'lsa,  $f(f(3))$  ni hisoblang.

A)  $\frac{13}{15}$  B)  $\frac{19}{13}$  C)  $\frac{13}{17}$  D)  $\frac{17}{13}$

8.  $\sqrt{1 - \cos x} = \sin x$  tenglamaning  $[\pi, 3\pi]$  kesmadagi ildizlari yig'indisini toping.

A)  $2\pi$  B)  $3\pi$  C)  $4,5\pi$  D)  $4\pi$

9.  $\left( \frac{2\log_6 2 + \log_6 17}{\log_6 \sqrt[3]{0,25} + \log_6 \frac{1}{3}} \right)^2$  ni hisoblang.

A)  $9\log_6 27$  B) 18 C) 27 D) 9

10.  $\begin{cases} x^2 + y^2 = 2(xy + 2) \\ x + y = 6 \end{cases}$  tenglamalar sistemasidan  $|x - y|$  ni toping.

A) 0 B) 1 C) 2 D) 3

11.  $x\sqrt{3-2x-x^2} \geq 0$  tengsizlikni yeching.

A)  $[0, \infty)$  B)  $\{-3\} \cup [0, 1]$  C)  $[1, \infty)$  D)  $[0, 1]$

12.  $3 \cdot 13 \cdot 31^2 \cdot 33 \cdot 37^2$  ko'paytmaning natural bo'luvchilari sonini toping.

A) 108 B) 216 C) 106 D) 54

13.  $2+5+8+\dots+x=100$  tenglamani qanoatlantiradigan  $x$  musbat sonni toping.

A) 17 B) 20 C) 29 D) 23

14.  $y = \frac{\sqrt{2x-1} + \sqrt{x-1}}{x^2 - 5x + 8}$  funksiyaning aniqlanish sohasini toping.

A)  $[1, \infty)$  B)  $[0, 5; 1]$  C)  $[0, 5; \infty)$  D)  $(-\infty; 0, 5)$

15.  $\int \frac{dx}{3+x^2}$  integralni hisoblang.

A)  $\frac{1}{\sqrt{3}} \arctg x + c$  B)  $\frac{1}{3} \arctg \frac{x}{3} + c$  C)  $\frac{1}{\sqrt{3}} \arctg \frac{x}{3} + c$  D)  $\frac{1}{\sqrt{3}} \arctg \frac{x}{\sqrt{3}} + c$

16.  $\begin{cases} |5+x| \leq 9 \\ |2x+5| \geq 13 \end{cases}$  tengsizliklar sistemasini qanoatlantiruvchi nechta butun son

mavjud?

A) 7 B) 4 C) 6 D) 5

17.  $\frac{\sin 1^\circ \sin 2^\circ \dots \sin 90^\circ}{\sin 91^\circ \sin 92^\circ \dots \sin 179^\circ}$  ni hisoblang.

A)  $\frac{\sqrt{2}}{2}$  B) 1 C) 2 D)  $\frac{\pi}{2}$

18. Yuzi  $120 \text{ sm}^2$ , diagonali esa  $17 \text{ sm}$  bo'lgan to'g'ri to'rtburchakning tomonlarini toping.

A) 12; 10 B) 30;4 C) 15;8 D) 16;12

19. A(2;1) nuqtadan  $3x-4y+5=0$  to'g'ri chiziqqacha bo'lgan eng qisqa masofani toping.

A)  $\frac{7}{5}$  B)  $\frac{1}{4}$  C)  $\frac{4}{5}$  D) 2

20.  $2+4+8+\dots+2048$  yig'indini hisoblang.

A)  $2^{12}$  B)  $2 \cdot (2^{12} - 1)$  C)  $2^{14} - 1$  D)  $4 \cdot (2^{13} - 1)$

21. Agar  $x^2 - x - 7 = 0$  tenglamaning ildizlari  $x_1, x_2$  bo'lsa,  $\frac{1}{x_1} + \frac{1}{x_2}$  ni

hisoblang.

A) 7 B) 6 C)  $-\frac{1}{7}$  D)  $-\frac{1}{2}$

22. Hisoblang:  $\frac{1}{2+\sqrt{3}} + \frac{2}{\sqrt{3}-1}$ .

A) 3 B) 1 C) 2 D) 5

23. Tenglamani yeching:  $\log_2(3-x) + \log_2(1-x) = 3$ .

A) -1 B) 5 C) -1,5 D)  $\emptyset$

24. Agar  $a^2 + \frac{9}{a^2} = 31$  bo'lsa,  $a - \frac{3}{a}$  ni hisoblang.

A)  $\pm 5$  B) -3 C)  $\pm 4$  D) 3

25. Ifodani soddalashtiring:  $\left(m^2 - \frac{2+m^4}{m^2-1}\right) : \frac{m^2+2}{m-1}$ .

A)  $-\frac{1}{m+1}$  B)  $-\frac{m}{m+1}$  C)  $-\frac{1}{m}$  D) 1