

MATEMATIKA 31.07.2019

1- VARIANT

1. $2,6 \cdot 7,7 + 2,6 \cdot 3,8 + 2,4 \cdot 16,2 - 4,7 \cdot 2,4$ ni hisoblang.

A)53,5 B)50 C)100 D)57,5

2. $a^3 + b^3 = 15$ va $a^2b + ab^2 = 4$ bo'lsa $a + b = ?$

3. Temirning 72% kesib olindi, qolgan qismining og'irligi 53,9 kg bo'lsa, temirning kesib olingan qismini og'irligini toping.

A)138,6 B) 192,5 C)161,7 D)150

4. $f(x) = \ln\left(\frac{5x-12}{4x-15}\right)$ funksiyaning $x_0 = -3$

nuqtadagi urinmasi va koordinata o'qlari bilan hosil qilgan soha yuzini hisoblang.

A) $\frac{1}{3}$ B) $\frac{1}{2}$ C) $\frac{1}{9}$ D) $\frac{1}{6}$

5. Silindr balandligi 8ga o'q kesimining diagonali 17 ga teng. Silindr asosining radiusini toping.

A)15 B)7 C)7,5 D)10

6. Ifodani soddalashtirng.

$$\frac{\sin 2a}{1 + \cos 2a} \cdot \frac{\cos a}{1 + \cos a} - \frac{1 - \cos a}{\sin a} - 1$$

A) $\cos a - 1$ B) -1 C) $\operatorname{tg} a - 1$ D) $\sin a - 1$

7. $\frac{x-3}{\sqrt{9x+18}-2x^2} \leq 0$ tengsizlikning barcha butun yechimlari yig'indisini toping.

A)5 B)11 C)9 D)6

8. Merganning nishonga tekizish extimoli 0,6 ga teng. U nishonga 2 marta o'q uzganda o'qlardan biri nishonga tegishining extimolini toping.

A)0,6 B)0,24 C)0,48 D)0,5

9. $\sqrt[4]{\frac{9-4\sqrt{5}}{5x}} \cdot (5\sqrt{x} + \sqrt{20x})^{0,5} \cdot 2^{-1}$

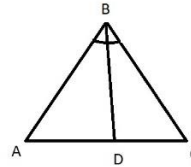
A) $\sqrt{\frac{5}{17}}$ B) 1 C) $\frac{3}{\sqrt{17}}$ D) 0,5

10. Ko'pxadlarni ko'paytiring. $(3a+5) \cdot (4a-3)$

A) $12a^2 + 29a - 15$ B) $12a^2 - 11a - 15$ C) $12a^2 + 11a - 15$ D) $12a^2 - 29a - 15$

11. $\int \left(\frac{1+x}{x^2+2x+20} \right) dx$ bo'lsa $F(x) = ?$

12. Rasmda ABC uchburchak va uning BD bissektisasi tasvirlangan. Agar $AB = 8$ va $BC = 10$ ga bo'lsa, $DC : AC$ nisbatini toping.



A) $\frac{4}{9}$ B) $\frac{5}{9}$ C) $\frac{4}{5}$ D) $\frac{9}{5}$

13. a soni quyidagilardan qaysi biriga teng bo'lganda a , $a+4$, va $a+6$, sonlar tub sonlar bo'ladi.

A)13 B)19 C)17 D)11

14. $2 + \frac{1}{n+3} = \frac{13}{5}$ n natural sonning qanday qiymatida tenglik o'rinli bo'ladi?

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

15. $f(x) = \frac{15}{4x^2} + \frac{12x^2}{5}$ funksiyaning eng kichik qiymatini toping.

A) 7 B)8 C)6 D)5

16. Arifmetik progressiyani tashkil etuvchi $n+3$, $n+9$, $n+15$, ..., $n+123$ ket - ketlikning o'n birinchi hadi 67 ga teng bo'lsa, bu ket - ketlikni to'rtinchi hadini toping.

A)25 B)19 C)24 D)22

17. Hisoblang. $\left(\operatorname{tg} \frac{7\pi}{24} + \operatorname{tg} \frac{5\pi}{24} \right) \cdot \cos \frac{\pi}{12} + 2$

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

18. α tekislik va uni kesib o'tadigan AB kesma berilgan. Kesmaning uchlaridan α tekislikkacha bo'lgan masofalar $AA_1 = 19$ sm $BB_1 = 9$ sm bo'lsa, AB kesmani A uchidan boshlab hisoblaganda 3:4

nisbatda bo'luvchi C nuqtadan α tekislikkacha bo'lgan masofani toping.

- A)6 B)7,2 C)7 D)6,8

19. ABCD parallelogramning BC va CD tomonlaridan mos ravishda M va N nuqtalar shunday tanlab olinganki C uchidan boshlab hisoblagan (BC va CD tomonlarini) $2:1$ nisbatda bo'ladi. Agar parallelogramning yuzi 45 ga teng bo'lsa, AMN uchburchak yuzini toping.

- A)15 B)25 C)20 D)10

20. Agar charxpalak 5 minutda $36\frac{2}{3}$ marta aylansa, u 12 minutda necha marta aylanadi?

- A) $86\frac{1}{3}$ B)91 C)86 D)88

21. Tenglamani yeching.

$$\frac{x+4}{6} - \frac{x-3}{3} + 2 = \frac{x}{8} + 2\frac{3}{4}$$

$$\frac{2}{3} + 4 \quad 2 + \frac{1}{3} \quad \left(\frac{4}{7}\right)^{-1}$$

- A)-14 B)30 C)14 D)-30

22. $\left(\frac{|x|+x}{x-1}\right)^2 - \frac{14x}{x-1} + 12 = 0$ tenglamaning barcha haqiqiy ildizlaari yig'indisini toping.

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

23.
$$\begin{cases} \log_{\frac{1}{2}}(x-3)^2 > -2 \\ (x-2)^2 \geq 4 \end{cases}$$
 tengsizliklar sistemasi

nechta butun yechimga ega?

- A)cheksiz ko'p B)butun yechimga ega emas C)1 D)3

24. $\frac{512(2^6)^4}{(2^5)^5 \cdot 64} \cdot (4^{-2})^{-2} \cdot 8^{-4}$ hisoblang

- A)16 B) $\frac{1}{8}$ C)4 D) $\frac{1}{4}$

25. $\frac{3^{x+2} - 81}{3^{x+1} - 9} \geq 3$ tengsizlikni yeching.

- A) $(1; +\infty)$ B) $\left(\frac{1}{3}; +\infty\right)$ C) $(-\infty; 1)$ D) $(0; 1)$

26. Agar a va b ratsional sonlar uchun

$a + b\frac{\sqrt{2}}{2} = 5$ bo'lsa, u holda $a^2 + b^2$ ifodaning qiymatini toping.

- A)50 B)25 C)18 D)17

27. Ifodani soddashtiring. ($a \in (-2; 2)$)

$$\frac{|a^2 - 16|}{4 - a} - \frac{|a^2 - 9|}{3 + a} - \frac{|4 - a^2|}{2 - a}$$

- A) $a - 6$ B) $a - 1$ C) $-3(a + 1)$ D) $2 - a$

28. Parallelepipedning tomonlari 21dm, 24dm va 26dm bo'lsa undan tomoni 5dm kub qirqib olinsa qolgan parallelepipedning perimetrini toping.

- A)300dm B)290dm C)120dm D)130dm

29. $y = -8x + 3$ funksiyaning $(0; 0)$ nuqtadan nuqtadagi simmetriya tenglamasini toping.

- A) $y = -8x + 3$ B) $y = 8x - 3$ C) $y = -8x - 3$ D) $y = 8x - 3$

30. Ko'paytuvchilar ajrating. $-x(2x - 3y) - 4x + 6y$

- A) $(x + 2)(3y - 2x)$ B) $(x - 2)(3y - 2x)$ C) $(x - 2)(3y + 2x)$ D) $(x + 2)(3y + 2x)$

29. $\sqrt[4]{6x(5+2\sqrt{6})} \cdot \sqrt{3\sqrt{2x}-2\sqrt{3x}}$ ildizlari
yig'indisining o'rta arifmetigini toping.

