TEST 51

@matematika_informatika

1. $x^2<99$ tengsizlikni qanoatlantiruvchi eng katta natural sonning natural bo`luvchilari yig`indisini toping?

A) 10 **B)** 12 **C)** 13 **D)** 15

2. x<0 da $|x-|x-7||-7$ ifodani modul belgisisiz yozing.

A) 0 **B)** 2x-14 **C)** 2x **D)** -2x

3. $\frac{2^x+12^x+14^x}{5^x+30^x+35^x}=\frac{375}{24}$ tenglamani yeching.

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

4. *Natural n soning kvadrati 3 ga bo linganda nechta qoldiq hosil bo lishi mumin ?*

A) 2 **B)** 4 **C)** 0 **D)** 3

5. Bir maktabning uch o`quvchisi Azamat , Aziza, Anora matematika fanidan olimpiada musobaqasiga qatnashishdi va 1 ta 1 o`rin, 1 ta 2 o`rin va 1 ta 3 o`rinni egallashdi. Biroq ularga kim qaysi o`rinni egallaganligini aytishmadi. Ma`lumotlarga qaraganda Aziza 1- o`rinni olmaganini, Azamat 2-o`rinni olmaganini Anora esa 2- o`rinni olganini aytishdi. Bu 3 ta fikrdan faqat 1 tasi rost bo`lsa, Azamat nechanchi o`rinni egallagan?

A) I **B)** II **C)** III **D)** aniqlab bo`lmaydi.

6. $\frac{105}{4},\frac{110}{5},\frac{115}{6},\frac{120}{7}\ldots$ ketma-ketlikning nechta hadi butun son bo`ladi?

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

7. (x_0,y_0) quyidagi tenglamalar sistemasining yechimi bo`lsa, $x_0^2+y_0^3$ ni toping?

$$\begin{cases} y-2=\sqrt{x} \\ y-3=\sqrt{x-3} \end{cases}$$

A) 50 **B)** 60 **C)** 75 **D)** 80

8. $P(x)=(3x-1)^{2017}\cdot(2x-1)^{2016}+(4x-3)^2\cdot(6x-5)^2+2$ ko`phadning koeffitsiyentlari yig`indisini toping?

A) 16 **B)** $2^{2017}+1$ **C)** 9 **D)** $2^{2017}+3$

9. $\frac{2^x-3^x}{3\cdot 2^{x-1}}>3+\left(\frac{2}{3}\right)^x$ tengsizlikning nechta butun yechimi bor?

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

10. Munisa ishni 12 soatda bajaradi. Shaxnoza undan 1,5 marta tezroq bajaradi. Ikkalasi bu ishni birgalikda necha soatda bajaradi?

A) 4 **B)** 4,8 **C)** 4,2 **D)** 4,6

11. $y=f(x)$ funksiya D to`plamda noqat`iy o`suvchi bo`lsin. D to`plamdan olingan ixtiyoriy a, b elementlari uchun (a>b) quyidagi munosabatlarning qaysi biri o`rinli?

A) $f(a)\le f(b)$ **B)** $f(a)<f(b)$

C) $f(a)\ge f(b)$ **D)** $f(a)>f(b)$

12. $1-2+3-4+5-6+7-8+\ldots+2015-2016+2017-2018+2$ hisoblang.

A) 1009 **B)** -1008 **C)** 1010 **D)** -1010

13. $\begin{cases} \frac{1}{x+y}+\frac{1}{x-y}=\frac{5}{8} \\ \frac{1}{x-y}-\frac{1}{x+y}=\frac{3}{8} \end{cases}$ bo`lsa, $x\cdot y$ ning qiymatini toping?

A) 14 **B)** 15 **C)** 16 **D)** 18

14. $\left[\frac{3x-2}{4}\right]=3$ nechta natural son tenglamaning yechimi bo`ladi? [a]- a sonining butun qismi

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

15. $\frac{16^3\cdot 3^{21}}{2^8\cdot 5^6}:\frac{18^{10}}{2^7\cdot 5^8}$ hisoblang.

A) 50 **B)** 150 **C)** 120 **D)** 300

16. $\sqrt{6^{x+2}-2}=8-36\cdot 6^x$ tenglamaning ildizlari ko`paytmasini toping?

A) $-\log_6\frac{11}{36}$ **B)** $\log_6\frac{1}{36}$ **C)** 1 **D)** -1

17. $a_1=lg3, a_2=lg(2^x-2)$ va $a_3=lg(2^x+4)$ sonlar arifmetik progressiyani tashkil qiladi. x ning qiymatini aniqlang?

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

18. Agar $a>0$ bo`lsa, $y=\frac{a}{|x+a|}$ funksiyaning gorizontal asimtotasini toping?

A) $y=-a$ **B)** $y=0$ **C)** $x=-a$ **D)** $x=0$

19. 283 va 191 sonlari asosida 12 ga karrali bo`lgan qanday son bor?

A) 284 **B)** 286 **C)** 290 **D)** 288

20. $\log_{\sqrt[3]{7}}\sqrt[5]{7}\cdot\left(2^{\log_2 11}-\log_2 4-\log_2 16\right)$ sonining nechta natural bo`luvchisi bor?

A) 1 **B)** 2 **C)** 3 **D)** aniqlab bo`lmaydi

21. $y=\frac{|x^2-x-12|}{\sqrt{-x^2+11x-18}}$ funksiyaning aniqlanish sohasini toping?

A) $(4;9)$ **B)** $(2;9)$ **C)** $(-3;9)$ **D)** ¿

22. $\frac{x^2-7x-2}{x^2+3x+2}-\frac{2x-8}{x+2}\geq 0$ tengsizlikni yeching.

A) $(-3;-2)U(-1;2)$ **B)** $[-3;-2)U¿$

C) $[-3;-2)U¿$ **D)** $(-3;-2)U(-2;2)$

23. $f(3x-7)=x^2-4x-99$ bo`lsa, $f(5)=?$

A) -19 **B)** -99 **C)** -27 **D)** -91

24. $(x^2+4x)^2+x^2+4x-30=0$ tenglamaning barcha ildizlari ko`paytmasini toping?

A) -5 **B)** -6 **C)** -30 **D)** 3

25. $\begin{cases}\left(\frac{1}{9}\right)^{\frac{4-x^2}{2}}\geq 27^x \\ \log_{x+2}(2x^2+x)>2\end{cases}$ tengsizliklar sistemasini yeching.

A) $(-4;\infty)$ **B)** $(0;\infty)$ **C)** $(4;\infty)$ **D)** $\varnothing$

26. a va b sonlarning natural bo`luvchilari soni 6 ga teng bo`lsa, 3a+b va a sonlarining umumiy bo`luvchilari nechta?

A) 4 **B)** 6 **C)** 1 **D)** aniqlab bo`lmaydi

27. $(x^3+2x-4)^{18}\cdot(x^2-3x+1)^6$ ko`paytmaning koeffitsiyentlari yig`indisini toping?

A) 4 **B)** 0 **C)** 1 **D)** -4

28. Kasrning maxraji suratidan 3 ga katta. Agar suratiga 7 ni, maxrajiga 5 ni qo`shsak, kasr 1/2 ga ortadi. Kasrni suratini toping?

A) 7 **B)** 5 **C)** 4 **D)** 2

29. Agar $x=\frac{\sqrt{15}+1}{2}$ bo`lsa, $\frac{x^3-2x^2+6{,}5x-1}{x^2-x+1}$ kasrning qiymatini hisoblang.

A) $2-\sqrt{15}$ **B)** $\sqrt{15}+2$ **C)** $\sqrt{15}$ **D)** $1+\sqrt{11}$

30. $\log_{12}2=j$ bo`lsa, $\log_{18}72$ ni j orqali ifodalang.

A) $\frac{2-j}{2-3j}$ **B)** $\frac{3-3j}{4-8j}$ **C)** $\frac{2-j}{1-3j}$ **D)** $\frac{3-j}{2-8j}$

31. Tutgan balig`ining og`irligi qancha degan savolga baliqchi – baliqning dumi 5 kg, boshi uning dumi hamda tanasi yarmining og`irligiga teng, tanasi esa boshi va dumining og`irligiga teng deb javob berdi. Baliqning og`irligi qancha?

A) 35 **B)** 30 **C)** 40 **D)** 45

32. $\frac{\sqrt{2}+1}{\sqrt{2}-1},\frac{1}{2-\sqrt{2}},\frac{1}{2},\ldots$ hisoblang.

A) $\frac{2\sqrt{3}+5}{2}$ **B)** $\frac{3\sqrt{3}+5}{2}$ **C)** $2+3\sqrt{2}$ **D)** $4+3\sqrt{2}$

33. Ruslan va Madinaning yoshlari yig`indisi Jahongirning yoshidan kichik. Jahongir va Ruslanning yoshlari yig`indisi Dilnozaning yoshidan kichik. Dilnoza Ruslannig opasi, Madina Jahongirning singlisi. Ruslan va uning singlisi Shaxnozaning yoshlari yig`indisi Madinaning yoshidan kichik bo`lsa, bolalardan qaysi birining yoshi Madinaning akasi yoshidan katta ?

A) Ruslan **B)** Madina **C)** Dilnoza **D)** Jahongir

34. *Agar* $\log_9 5=a,\log_{25}8=b$ bo`lsa, $\log_2 3$ ni a va b orqali ifodalang?

A) $\frac{4ab}{3}$ **B)** $\frac{4}{3ab}$ **C)** $\frac{3}{4ab}$ **D)** $\frac{3ab}{4}$

35. $\begin{cases}13-2x>0 \\ 3x-9>0\end{cases}$ tengsizlikning butun yechimlari nechta?

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

36. $\frac{1}{\sqrt[3]{2^2}+\sqrt[3]{6}+\sqrt[3]{3^2}}+\frac{1}{\sqrt[3]{3^2}+\sqrt[3]{12}+\sqrt[3]{4^2}}+\ldots+\frac{1}{\sqrt[3]{26^2}+\sqrt[3]{26\cdot 27}+\sqrt[3]{27^2}}$ soddalashtiring.

A) 67 **B)** 107 **C)** $3\sqrt[3]{2}$ **D)** $3-\sqrt[3]{2}$