TEST 50

@matematika_informatika

1. $x^2<65$ tengsizlikni qanoatlantiruvchi eng katta natural sonning natural bo`luvchilari yig`indisini toping?

A) 10 **B)** 20 **C)** 12 **D)** 15

2. x<0 da $|x-|x-5||-5$ ifodani modul belgisisiz yozing.

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

3. $\frac{3^x+6^x+9^x}{5^x+10^x+15^x}=\frac{50}{18}$ tenglamani yeching.

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

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

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

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 olmaganini aytishdi. Bu 3 ta fikrdan faqat 1 tasi rost bo`lsa, Anora 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 musbat 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, $\frac{x_0}{y_0}$ ni toping?

$$\begin{cases}3=\sqrt{x}+\sqrt{y}\\1=\sqrt{x}-y\end{cases}$$

A) 3 **B)** 4 **C)** 5 **D)** 6

8. $P(x)=(3x+1)^{2017}\cdot(8x+1)^{2016}+(4x-1)^2\cdot(2x-1)^2+x-1$ ko`phadning ozod hadini toping?

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

9. $4^x\le 3\cdot 2^{\sqrt{x}+x}+4^{1+\sqrt{x}}$ tengsizlikni yeching.

A) [1; 4] **B)** [0; 4] **C)** $(-\infty;4]$ **D)** [0; 1]

10. Rustam ishni 12 soatda bajaradi. Anvar undan 50% tezroq bajaradi. Ikkalasi bu ishni birgalikda necha soatda bajaradi?

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

11. $y=f(x)$ funksiya D to`plamda noqat`iy kamayuvchi 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) $f(a)=f(b)$ **D)** $f(a)>f(b)$

12. $3-4+5-6+7-8+\ldots+2013-2014+2015-2016+2017$ hisoblang.

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

13. $\begin{cases}\frac{x+y+4}{5}+\frac{x-y-4}{7}=9\\\frac{x+y+4}{5}-\frac{x-y-4}{7}=1\end{cases}$ bo`lsa, $x-y$ ning qiymatini toping?

A) 25 **B)** 21 **C)** 32 **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. $\frac{(3^{15}+3^{13})\cdot 2^9}{(3^{14}+3^{12})\cdot 1024}$ hisoblang.

A) 4 **B)** 1,5 **C)** 2,5 **D)** 3,5

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

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

17. $a_1=lg\,4, a_2=lg\,(2^x-4)$ va $a_3=lg\,(2^x+20)$ sonlar arifmetik progressiyani tashkil qiladi. $\frac{x}{4}$ ning qiymatini aniqlang?

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

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

A) $y=-a$ **B)** $y=1-a$ **C)** $x=a$ **D)** $x=-a$

19. 141 va 152 sonlari asosida 9 ga karrali bo`lgan qanday son bor?

A) 146 **B)** 144 **C)** 151 **D)** 142

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

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

21. $y=\frac{\sqrt{6x-x^2-5}+\sqrt{x-3}}{\sqrt{x^2+8x+18}}$ funksiyaning aniqlanish sohasini toping?

A) $[1;3]$ **B)** $[3;5]$ **C)** ¿ **D)** $[1;5]$

22. *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)** $\frac{3ab}{4}$

23. $f(2x-3)=x^2-4x-31$ bo`lsa, $f(3)=?$

A) -29 **B)** -31 **C)** -22 **D)** -34

24. $(x^2+x-2)^2+(x^2+x-2)-2=x$ tenglamaning butun ildizlari ko`paytmasini toping?

A) 0 **B)** -4 **C)** -1 **D)** -2

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 natural sonlarning eng katta umumiy bo`luvchilari 2 ga teng bo`lsa, 5a+b va a sonlarining umumiy bo`luvchilari nechta>

A) 4 **B)** 2 **C)** 1 **D)** aniqlab bo`lmaydi

27. $(x^3+31x-1)^{22}\cdot(x^2-22x+1)^{31}$ ko`paytmaning ozod hadini 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 maxrajini toping?

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

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

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

30. $\log_{12} 2=j$ bo`lsa, $\log_{81} 216$ 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 7 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) 48 **B)** 42 **C)** 47 **D)** 44

32. $1, 10, 25, 46\ldots$ ketma-ketlikning 5-hadini aniqlang?

A) 85 **B)** 69 **C)** 73 **D)** 94

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 o`rtancha yoshga to`g`ri keladi ?

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

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

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

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

35. $\begin{cases} x^2+x>0 \\ 1-x<0 \end{cases}$ tengsizlikning yeching?

A) $(0;1)$ **B)** $(1;\infty)$ **C)** $(-\infty;-1)$ **D)** $[1;\infty)$

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)** $3-\sqrt[3]{2}$