Matematika va informatika

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1.{2−}+{2+}+{3−}+{3+}+

{4−}+{4+}+⋯+{2017−}+

+{2017+} hisoblang. Bunda {𝑎}−𝑎 sonining kasr qismi.

A) 2016 B) 2017 C) 1973 D) 1972

2. x=1; y=2x va y=2-x funksiyalar bilan chegaralangan soha yuzini toping.

 A) log2 e B) log4 2e C) log4 e D) –log4e

3. Ifodani soddalashtiring.

cos2 x+tg2 xcos2 x

A) 0,7 B) 4 C) 2 D) 1

4. ABC uchburchakning BC tomonida D nuqta olingan.Agar BD=16,DC=4 va AB=AD=10 bo’lsa, ADC uchburchakning yuzini toping.

A)16 B)14 C)10 D)12

5. Hech bir uchtasi bir to’g’ri chiziqda yotmaydigan 25 ta nuqtadan nechta uchburchak yasash mumkin?

A)2300 B) 150 C)600 D)8

6. A(0;1) va B(5;-3) nuqtalar berilgan.Agar B nuqta AC kesmaning o’rtasi bo’lsa, C nuqta koordinatalar yig’indisini toping.

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

7. *a* va *b* birlik vektorlarga qurilgan parallelogramning

dioganallari orasidagi burchakni toping.

A)90 B) 45 C)30 D)60

8. Piramidaning tomonlari 13, 14, 15 ga teng bo’lgan uchburchakdan iborat. Piramidaning barcha ikki yoqli burchaklari 60 ga teng bo’lsa, uning hajmini toping

A)100 B)84 C)121 D)112

9. A(3;0) va B(-1;2) nuqtalardan o’tuvchi hamda markazi y=x+2 to’g’ri chiziqda yotgan aylana markazining koordinatasini toping.

A) (4;5) B) (5;3) C) (3;4) D) (3;5)

10. Mobil telefon to’liq quvvatlantirilganda 4 soat suhbatlashish yoki 12 soat kutish holatiga yetadigan quvvat oladi. Yo’lovchi poyezdga chiqishdan oldin mobil telefonni to’liq quvvatlab oldi va yurgan vaqtning yarmida suhbatlashib ketdi. Agar mobil telefondagi quvvat to’liq yo’lga ketgan va poyezddan tushayotgan payt tugagan bo’lsa, yo’lovchi poyezdda qancha vaqt yurgan.

A) 5 yarim soat B) 8 soat C) 4 yarim soat D) 6 soat

11. Agar f(2x-3)=3x+5 bo’lsa, f(f(1)) ni toping.

A) 26 B) 38 C) 16 D) 11

12. Agar 𝑥−7=6 bo’lsa, 𝑥−ning qiymatini toping.

A) 3 B) 8 C) 7 D) 6

13. a va b sonlar uchun a2 +b2 =14ab tenglik o’rinli bo’lsa, ning qiymatini toping.

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

14. Agar = bo’lsa, n2+1 ning qiymatini toping.

A) 26 B) 5 C) 17 D) 10

15. −1 dan katta a;b;c sonlari uchun 𝑎𝑏+𝑎+𝑏=11; 𝑏𝑐+𝑏+𝑐=5; 𝑎𝑐+𝑐+𝑎=1 tengliklar o’rinli bo’lsa, 𝑎𝑏𝑐+𝑎𝑏+𝑏𝑐+𝑎𝑐+𝑎+𝑏+𝑐 ifodaning qiymatini toping.

 A) 12 B) 11 C) 9 D) 8

16. Aniq integralni hisoblang:

A) B) C)0 D)

 17. Hisoblang: cos10-2cos50-cos70.

A) sin40 B) -sin50 C) -cos50 D) cos50

18. Agar tg258=𝑎 bo’lsa,

 cos24°∙( ning qiymatini toping.

A)2 B)1 C)4 D)0,5

19. (𝑎2−2𝑎+1)=(𝑎2+2a−3)x tenglama 𝑎 ning qanday qiymatlarida cheksiz ko’p yechimga ega bo’ladi?

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

20. Bir burchagi 60 bo’lgan to’g’ri burchakli uchburchakka tomoni sm ga teng bo’lgan romb shunday ichki chizilganki, 60 li burchak ular uchun umumiy, rombning barcha uchlari uchburchakning tomonlarida yotadi.Uchburchakning perimetrini toping

A) B)

C) D)

21. . Shunday n - natural sonni topingki, shu songacha bo‘lgan toq sonlar yig‘indisidan 50 marta kichik bo‘lsin.

A)200 B) 100 C)250 D) 300

22. 𝑦=𝑥 2−|2𝑥−4| fuksiya grafigiga x=3 va x=-3 nuqtalarda o’tkazilgan urinmalarning orasidagi burchak 𝑎 bo’lsa, 𝑐𝑜𝑠𝑎 ni toping.

A) 15/17 B) 5/13 C) 3/5 D) 𝜋/6

23. Hisoblang: 

A) B) 3 C) D) 1

24. Ahmad ikki kun. Arslon bir kun ishlaganda bir ishning 3/8 qismini bajarishadi. Agar Ahmad uch kun, Arslon ikki kun ishlasa, aynan o’sha ishning 5/8 qismini bajarishardi. Arslon bir o’zi ushbu ishni necha kunda tamomlaydi?

A) 8 B) 10 C) 4 D) 9

25. Quydagi javoblardan qaysi biri bo’sh to’plam ?

A) A={𝑥;𝑥2+𝑥+1=−4,𝑥∈𝑅}

B) A= {𝑥; 𝑥2≤0,∈𝑅}

C) A= {𝑥; 𝑥2<𝑥, 𝑥∈𝑅}

D) A= {𝑥; 3𝑥+5=0,∈𝑅}

26. Trapetsiyaning asoslari 1414 va 1814, balandligi 810 bo’lsa, uning yuzini 14lik sanoq sistemasida toping.

A) 24 B) A6 C) 26 D) B6

27. “KOMPYUTER” so’zi harflarini kodlash uchun eng kam bit talab etadigan ikkilikda tekis kodlash usulidan foydalanilgan. Shu bilan birga ikkilikdagi kodlar o’sib borish tartibi ingliz alifbosi harflarining o’sish tartibiga moslashtirilgan. P harfining kodini toping.

 A) 0101 B) 0010 C) 1010 D) 0100

28. 77 soni Rim raqami yordamida qanday yoziladi.

A) LXXVII B) XXXLVV C) YXXVLL D) LXXVX

29. Berilgan: A1=7, B1=12, A2=45, B2=24, C1==ABS(A1-$B1)+СУММ(A$1:B$1) bo’lsa, C1 yacheykadagi formula D2 yacheykaga ko’chirildi. C1

va D2 kataklardagi sonlar o’rta arifmetigini toping.

A) 24 B) 38 C) 30 D) 42

30. Quyida HTML kodining bir qismi berilgan: <table > <tr> <td colspan=3> 198 </td> <td> 314 </td> </tr> <tr> <td> 94</td><td > 117</td> <td rowspan=2> -122</td> <td>76</td> </tr> <tr> <td> -57 </td> <td> -78 </td> <td>164</td> </tr> </table>. Birlashgan kataklardagi sonlar yig’indisini kataklar soniga ko’paytmasini toping. A) 548 B) 684 C) 608 D)760