

YANGI SAVOLLAR 2018

1. Uchta sonning uchinchi ikkinchisidan nechta ortiq bo'lsa, ikkinchi birinchisidan shuncha ortiq, bu sonlardan ikkita kichigining ko'paytmasi 504 ekanligi ma'lum, shu uchta sondan birinчисini toping.

Javob:18 @matematikaflly

2. Nolga teng bo'lmagan a,b,c haqiqiy sonlar uchun

$$\frac{a}{b+c} + \frac{b}{c+a} + \frac{c}{a+b} = -1$$

berilgan bo'lsa,  $\frac{a^2}{b+c} + \frac{b^2}{a+c} + \frac{c^2}{a+b}$  ni hisoblang.

Javob:-2

3. Teng yonli trapetsiyaning pastki asosi 30 sm ga, ustki asosi 18 sm ga teng. Bu trapetsiyaning diogonallari o'zaro perpendikulyar. Uning yuzini toping.

Javob:576

4. Bir burchagi 60° bo'lgan to'g'ri burchakli uchburchakka tomoni 6 sm ga teng bo'lgan romb shunday ichki chizilganki, 60° li burchak ular uchun umumiy, rombnig barcha uchlari uchburchakning tomonlarida yotadi. Uchburchakning yuzini toping.

Javob:  $\frac{81\sqrt{3}}{2}$  @matematikaflly

5.  $y = 4x^2$  va  $y = -4x^2 - 8$  parabolalarga absissalar o'qi bilan o'tkir burchak tashkil qiladigan umumiy urinma o'tkazilgan. Shu urinmaning tenglamasini toping.

Javob:  $y=8x-4$

6. Ifodani soddalashtiring:

$$\frac{27 - \log_a^3 b^3}{(\log_a b + \log_b a + 1) \cdot \log_a \frac{a}{b}} \cdot \log_b^9 a$$

Javob:3

7.  $\sqrt{4^8 + 2 \cdot 6^8 + 9^8} - \sqrt{4^7 + 6^8 + 9^8}$  ni hisoblang.

Javob:512

8.  $\int_0^1 x^9 \cdot (x^5 + 1)^{2n} \cdot (x^5 - 1)^{2n} dx = a$  bo'lsa,  $\frac{1}{a}$  ni hisoblang.

Javob:  $20n+10$

9. Bir nuqtadan aylanaga ikkita urinma o'tkazilgan. Har bir urinmaning uzunligi 12 sm, urinish nuqtalari orasidagi masofa 14,4 sm. Tekislikning shu aylana bilan chegaralangan qismining yuzini toping.

Javob:  $81\pi \text{ sm}^2$ .

10.  $f(x) = 4 + 3tg^2 2x$  bo'lsa,  $f'(\pi) = ?$

Javob:0 @matematikaflly

11.  $\sin x + \sin\left(x + \frac{2\pi}{3}\right) + \sin\left(x + \frac{4\pi}{3}\right) = ?$

Javob:0

12.  $\int_1^2 \frac{3}{2x-1} dx = ?$

Javob:  $\frac{3}{2} \ln 3$ .

13.  $\begin{cases} (x + xy^2 + y^2)(x + y^2)^2 = 225 \\ (x - xy^2 + y^2)(x + y^2)^2 = 25 \end{cases}$  x va y ni toping.

Javob: (1;2); (1;-2); (4; 1); (4;-1)

14.  $x^3 = \left(\frac{1}{3}\right)^x + 1$  tenglamaning nechta yechimi bor?

Javob: 1.

15.  $\int_0^{\frac{\pi}{2}} \sin\left(2x + \frac{\pi}{3}\right) dx$  integralni hisoblang.

Javob:0,5

16. a ning qanday eng kichik qiymatida  $-x^2 - 10x + 5 < a$  tengsizlik x ning barcha qiymatlarida o'rinli bo'ladi?

Javob:31

17. Ushbu  $\frac{5}{|x+2|+2} > |x+2| - 2$   
 tengsizlikni qanoatlantiruvchi butun sonlar nechta?  
 Javob:4

18. Hisoblang:  $\sin\left(\frac{1}{2}\arcsin\left(-\frac{2\sqrt{2}}{3}\right)\right)$   
 Javob:  $-\frac{1}{\sqrt{3}}$

19.  $y = x^5 - 5x^4 - 2$  funksiyaning (-1;1) oraliqdagi eng katta qiymatini toping.  
 Javob: -2 @matematikaflly

20. Tenglamani ildizlari ko'paytmasini toping.

$$\left(\sqrt{5 + \sqrt{24}}\right)^x + \left(\sqrt{5 - \sqrt{24}}\right)^x = 10$$

Javob: -4

21. Hisoblang:  $\frac{\left(\frac{1}{18}\right)^5 \cdot 64 \cdot \left(\frac{1}{27}\right)^{-4} + \left(\frac{1}{6}\right)^{-2}}{\left(\frac{2}{3}\right)^{-2}}$

Javob: 24 @matematikaflly

22. Ifodani soddalashtiring:  
 $((\cos\alpha - \cos\beta)^2 + (\sin\alpha - \sin\beta)^2) : \left(4\sin^2\frac{\alpha - \beta}{2}\right) - 3$

Javob: -2

23. Tenglamani ildizi 5 dan qancha kam?

$$\log_{x^2} 13 = \log_{4-3x} 13$$

Javob:9

24. Tenglamani ildizlari nisbatini toping:

$$x^2 - 11 + \sqrt{x^2 + 11} = 20$$

Javob: -1

25. Hisoblang: @matematikaflly

$$\sin\left(\frac{1}{2}\arcsin\left(-\frac{2\sqrt{2}}{3}\right)\right)$$

Javob:  $-\frac{1}{\sqrt{3}}$

26. Hisoblang:  $1 - ((\cos\alpha - \cos\beta)^2 + (\sin\alpha - \sin\beta)^2) : \left(4\sin^2\frac{\alpha - \beta}{2}\right)$   
 Javob: 0

27. To'g'ri berilgan integrallash formulalarini belgilang:

1)  $\int \sin(kx + b) dx = -\frac{1}{k} \cdot \cos(kx + b) + C$

2)  $\int \cos(b - kx) dx = -\frac{1}{b} \cdot \sin(b - kx) + C$

3)  $\int \text{tg}(kx + b) dx = -\frac{1}{k} \cdot \ln|\cos(kx + b)| + C$

Javob: 1 va 3

28. Tenglamani yeching.

$$2\sin^2x + 2\cos^2x = 3$$

Javob:  $\frac{\pi k}{2}$

29. Nolga teng bo'lmagan a,b,c haqiqiy sonlar uchun  $\frac{a}{b+c} + \frac{b}{c+a} + \frac{c}{a+b} = 0$

berilgan bo'lsa,  $\frac{a^2}{b+c} + \frac{b^2}{c+a} + \frac{c^2}{a+b}$  ni hisoblang.

Javob: -1

30. Hisoblang:  $\sqrt[3]{\frac{12}{5} \sqrt{\frac{244}{15(38^2 - 23^2)}}}$

Javob:  $\frac{2}{\sqrt[3]{25}}$  @matematikaflly

31. Ildizlari  $x_1 = \frac{1}{10+6\sqrt{2}}$  va  $x_2 = \frac{1}{10-6\sqrt{2}}$

bo'lgan kvadrat tenglama tuzing

Javob:  $28x^2 - 20x + 1 = 0$

32. Ifodaning qiymatini toping:

$$(a^2 - b^2 - c^2 + 2bc) : \left(\frac{a + b - c}{a + b + c}\right)$$

Bu yerda  $a=3, b=\sqrt{3}$  va  $c=-1$

Javob: 1

33. Quyidagilardan qaysilari to'g'ri?

1) Agar  $b>0, a>c>0$  bo'lsa, u holda  $\frac{a}{b} > \frac{c}{b}$  bo'ladi.

2) Agar  $a>0, b>c>0$  bo'lsa, u holda  $\frac{a}{b} < \frac{a}{c}$  bo'ladi.

3) Agar  $c>0, b>a>0$  bo'lsa, u holda  $\frac{a}{b} > \frac{a+c}{b+c}$  bo'ladi.

Javob:

34. Quyidagi tasdiqlarning qaysilari to'g'ri?  
 1) Trapetsiyaning o'rta chizig'i uning dioganallarini teng ikkiga bo'ladi  
 2) Agar teng yonli trapetsiyaning dioganali uning katta asosidagi burchagining bissektrissasi bo'lsa, u holda katta asos yon tomonga teng bo'ladi.  
 3) Agar teng yonli trapetsiyaning dioganali uning kichik asosidagi burchagining bissektrissasi bo'lsa, u holda katta asos yon tomonga teng bo'ladi.

Javob: 1 va 3 @matematikaflly

35. Uchburchakning katetlaridan biri 28 ga teng (16 lik sanoq sistemasida), ikkinchisi esa 2A ga (16 lik sanoq sistemasida) teng. Uchburchakning gipotenuzasini 16 lik sanoq sistemasida toping.

Javob: 3A

36. Aniq integralni hisoblang:

$$\int_0^2 (|x| + 1) dx$$

Javob: 4

37. Aniq integralni hisoblang:

$$\int_0^{\frac{\pi}{2}} \left( \frac{\cos x}{1 + \sin^2 x} \right) dx$$

Javob:  $\frac{\pi}{4}$  @matematikaflly

38. Uchburchak uchlarining koordinatalari A(-4;2), B(6;5), C(1;-4). A uchidan tushirilgan balandligi orqali o'tuvchi to'g'ri chiziq tenglamasini tuzing.

Javob:  $9y + 5x + 2 = 0$

39. A{3;4;5;6;7;8;9;10;11} va B{5;6;7;8;9;11} to'plamlar berilgan bo'lsa, A va B to'plam kesishmasining qism to'plamlari sonini toping.

Javob: 64 @matematikaflly

40. Bir nuqtadan aylanaga ikkita urinma o'tkazilgan. Har bir urinmaning uzunligi 15 sm, urinish nuqtalari orasidagi masofa 24 sm. Shu aylana uzunligini toping.

Javob:  $40\pi$

41. Bir burchagi  $60^\circ$  bo'lgan to'g'ri burchakli uchburchakka tomoni a sm ga teng bo'lgan romb shunday ichki chizilganki,  $60^\circ$  li burchak ular uchun umumiy, rombnings barcha uchlari uchburchakning tomonlarida yotadi. Uchburchakning perimetrini toping.

Javob:  $\frac{3}{2} a(3 + \sqrt{3})$

42. a ning qanday eng katta qiymatida  $4x^2 - 4x + 1 > a$  tengsizlik x ning barcha qiymatlarida o'rinli bo'ladi?

Javob:  $a < 0$  @matematikaflly

43. Tengsizlikni yeching:

$$\log_{(x-2)}(2x - 7) > 1$$

Javob:  $(5; +\infty)$

44. Aniq integralni hisoblang:

$$\int \frac{2dx}{x \ln 2x}$$

Javob:  $4 \ln(\ln(2x))$

45. Tenglamaning ildizlari yig'indisini toping:

$$(3^{x^2+5x+8} - 81)$$

$$\cdot \log_{10}(x^2 + 2x - 4) = 0$$

Javob:  $-\sqrt{6} - 5$

46. Tenglamani yeching:

$$(0.5)^{2x} - 6 \cdot (0.5)^x - 16 = 0$$

Javob: -3

47. Agar  $\overline{x457y}$  soni 55 ga qoldiqsiz bo'linsa, barcha x lar yig'indisini toping.

Javob: 7 @matematikaflly

48. To'g'ri burchakli uchburchakning katta katetiga urinuvchi va qarshisidagi burchak uchidan o'tuvchi aylana berilgan. Agar katetlar 12 va 9 bo'lsa, aylana radiusini toping.

Javob:

49. Quyidagi 1223334444.... ketma ketlikda 2017 honaga qaysi raqam to'g'ri keladi?

Javob:

50. Teng yonli trapetsiyaning dioganali 4 ga teng asosi bilan 45° burchak tashkil etsa, trapetsiyaning yuzini toping.

Javob: 7

51. Alisher, Sardor, Behruz, Odina, Kamola-o'quvchilardan bitta o'g'il bola va bitta qiz bolani imtihonga kiritish lozim. Bu ishni necha usul bilan amalga oshirish mumkin? Javob:

52. Funksiyaning aniqlanish sohasini toping.

$$y = \arcsin(|x - 0.5| + |x|)$$

Javob:

53. Tenglamalar sistemasini yeching:

$$\begin{cases} a + y + ay = 5 \\ a^2 + y^2 + ay = 7 \end{cases}$$

Javob:

54.  $f(x) = \frac{2e^x}{\ln x - \sqrt{3}\sin x}$  bo'lsa, F(e) ni hisoblang.

Javob:

55. Aniq integralni hisoblang.

$$\int_{-2}^1 |x - 2| dx$$

Javob: @matematikaflly

56. Tengsizlikning butun yechimlari sonini toping.

$$2^{\sqrt{x+1}} - 6 < 2^{4-\sqrt{x+1}}$$

Javob:

57. Agar arifmetik progressiyada  $a_1 = 2$ ,  $9a_{11} = a_{19}$  bo'lsa,  $S_{19}$  ni toping.

Javob: @matematikaflly

58. Teng yonli uchburchakning yon tomoni 10 ga teng, asosi 16 ga teng. Uchburchakka tashqi va ichki chizilgan aylanalarni markazlari orasidagi masofani toping.

Javob: @matematikaflly

59. Perimetri 40 bo'lgan parallelogramda dioganalar o'tkazilgan va parallelogram 4 ta uchburchakka bo'lindi, qo'shni uchburchaklar perimetrlari ayirmasi 10 ga teng bo'lsa, katta tomonni toping.

Javob: @matematikaflly

60. Og'ma prizma asosi parallelogrammdan iborat. Tomonlari  $a=3$ ,  $b=5$ , asosdagi burchak  $45^\circ$ , yon qirrasini  $c=4$ . Yon qirra va asos yelisligi orasidagi burchak  $\beta = 30^\circ$  bo'lsa, prizma hajmini hisoblang.

Javob:

61. Bozorda 5 xil ko'ylakni, 7 xil shimni va 4 xil tuflini necha hil usulda tanlash mumkin?

Javob:

62. Funksiyaning qiymatlar sohasini hisoblang:

$$y = \frac{\cos x(\tan x + 1) + \sin x(\cot x + 1)}{2}$$

Javob: @matematikaflly

63. Integralni hisoblang:

$$\int_{-\frac{3\pi}{2}}^{\frac{5\pi}{2}} \cos 3x dx$$

Javob:

64. Agar  $f(x) = (a + b - 6)x^3 + 2x^2 + (b - 3)x$  funksiya juft funksiya bo'lsa,  $f(a) + f(b)$  ni hisoblang.

Javob:

65. Agar  $f(x) = e^{x+\ln x}$  bo'lsa,  $f'(1)$  ni toping.

Javob:

66.  $a$  ning qanday qiymatlarida  $x^2 + (1 - 2a)x + a^2 - a - 2 = 0$  Tenglama ildizlari  $(-3;3)$  oraliqqa tegishli bo'ladi?

Javob:

67. Tengsizlikni yeching:

$$\sqrt{\frac{\sqrt{2}+\sqrt{3}-3}{x-5}} > \sqrt{3} - 4$$

Javob:

68.  $y = \ln(x^2 - 2x - 3)$  funksiyaning manfiy qiymatlar qabul qiladigan butun  $x$  lar sonini toping.

Javob @matematikafly

69. Hisoblang:

$$\left( 27 \cdot \left( 10,6 - \sqrt{3^3\sqrt{9}} - 9 \frac{3}{5} \sqrt[3]{9\sqrt{3}} \right) \right)^{-\frac{18}{5}}$$

Javob:

70. Tengsizlikning butun yechimlari nechta?

$$\frac{x^2}{4} + \frac{9}{x^2} - 2\left(\frac{x}{2} - \frac{3}{x}\right) - 2,25 \leq 0$$

Javob:

71. Hisoblang:

$$\frac{1}{\cos 200^\circ} + 4 \sin 50^\circ$$

Javob:

72. Tengsizlikni qanoatlantiruvchi eng kichik va eng katta butun yechimlari ayirmasining absolut qiymatini toping.

$$\sqrt{8 + 2\sqrt{3-x+1}} - 4\sqrt{3-x} + 2\sqrt{3-x+1} > 5$$

Javob:

73. Radiusi 3 ga teng bo'lgan aylanaga ikkita AB va AC urinmalar o'tkazilgan bo'lib, bunda A nuqta aylana markazidan 4 ga teng masofada joylashgan. Berilgan aylanaga, AB va AC urinmalarga urinuvchi aylana(hosil bo'lgan yangi aylananing radiusi berilgan aylananing radiusidan katta)ning radiusini toping.

Javob: @matematikafly

74. Uchburchakli piramidaning yon qirralari bir xil uzunlikka ega, bu uzunlik 6 ga teng. Bu piramidaning uchidagi tekis burchaklardan ikkinchisi  $45^\circ$ , uchinchisi  $60^\circ$  ga teng bo'lsa, piramidaning hajmini hisoblang.

Javob:

75. ABC uchburchakning tomonlari uzunliklari AB=5 va BC=4 va AC=4 bo'lsa,  $\vec{CA} \cdot \vec{CB}$  skalyar ko'paytmani hisoblang.

Javob:

76. Funksiyaning qiymatlar sohasini hisoblang.

$$f(x) = \left(\frac{1}{3}\right)^{x^2-6x+11}$$

77. Tenglamalar sistemasini yeching:

$$\begin{cases} 2^x \cdot 7^x = 28 \\ 2^x + 7^x = 11 \end{cases}$$

Javob:

78.  $a$  va  $b$  juft 6 ga bo'linmaydigan sonlar,  $a$  va  $b$  ni 6 ga bo'lganda qoldiq xar hil.  $a+b$  ni 6 ga bo'lgandagi qoldiqni toping.

Javob: @matematikafly

79. Agar  $f(x) = \frac{e^x}{\ln x} + \sin 7$  bo'lsa,  $f'(e)$  ni toping.

Javob:



80.  $a$  ning qanday qiymatlarida  $\int_3^a (3x - 1)dx = 4$  tenglik o'rinli bo'ladi? Javob:
81. Hisoblang:  $\frac{(\sqrt{5}-\sqrt{11})(\sqrt{33}-\sqrt{15}+\sqrt{22}-\sqrt{10})}{\sqrt{75}-\sqrt{50}}$   
Javob:
82. Ifodani soddalashtiring:  
 $\cos^4 \alpha + \sin^2 \alpha \cdot \cos^2 \alpha$   
Javob:
83. Ifodani soddalashtiring:  
 $-4\cos^2 \alpha - 4\sin^2 \alpha + 5$   
Javob:
84.  $\sin x = \frac{1}{2}$  bo'lsa,  $6,4 + 2tg^2 x$  ni hisoblang. Javob:
85. Ifodani soddalashtiring:  
 $\sqrt[5]{b^5} + \sqrt[6]{b^6} - \sqrt[7]{b^7} - \sqrt[4]{b^4}$   
Javob:
86. Tenglamani yeching:  
 $\frac{(5^x-25)(7^x-49)}{\sqrt{7-5x}} = 0$   
Javob:
87.  $A \cap B = \{b; c; d\}$ ,  $A \cap C = \{a; b\}$  bo'lsa,  $A \cap (B \cup C)$  to'plam elementlarini toping.  
Javob:
88.  $A \cap B = \{b; c; d\}$ ,  $A \cap C = \{a; d\}$  bo'lsa,  $A \cap (B \cup C)$  to'plam elementlarini toping.  
Javob:
89. Teng yonli uchburchak asosi 8 ga, yon tomoniga o'tkazilgan mediana 10 ga teng. Uchburchakning yon tomonini toping.  
Javob:

@matematikafly

90. Teng yonli uchburchakning yon tomoni 20 ga, asosidagi burchak kosinusi 0,6 ga teng bo'lsa, asosga tushirilgan balandlikni toping.  
Javob:
91. Og'ma prizmaning asosi parallelogramdan iborat bo'lib, uning asosi tomonlari 5 va 4 ga, ular orasidagi burchak  $45^\circ$  ga teng. Yon qirradi uzunligi 4 ga teng va asos tekisligi bilan  $30^\circ$  li burchak tashkil qiladi. Prizmaning hajmini toping.  
Javob:
92. Tengsizlikni yeching:  
 $|3 - |x - 2|| \leq 1$   
Javob:
93. Tengsizlikni yeching:  
 $\frac{1}{x-1} + \frac{3}{|x|+1} \geq \frac{1}{|x|-1}$   
Javob:
94. Tenglamani natural yechimlari sonini toping  
$$\sqrt{x + \sqrt{4x + \sqrt{16x + \sqrt{\dots + \sqrt{4^{10} \cdot x + 3}}}}} = \sqrt{x} + 1$$
  
Javob:
95. Agar  $m = a\cos x + b\sin x$  va  $n = -\sqrt{a^2 + b^2}$  bo'lsa,  $x$  ning istalgan qiymati uchun qanday tengsizlik o'rinli bo'ladi?  
Javob:
96. Arifmetik progressiyaning oltinchi va o'ninchi hadlari yig'indisi 38 ga, to'qqizinchi va o'n birinchi hadlari yig'indisi esa 23 ga teng bo'lsa, arifmetik progressiyaning dastlabki o'n sakkizta hadi yig'indisini toping.  
Javob:

97.  $6^x - 6^{-x} = 6$  bo'lsa,  $(6^x - 6) \cdot 6^x$  ni hisoblang.

Javob:

98.  $f(x) = 7^x, g(x) = 8^x$  va  $h(x) = 9^x$  bo'lsa,  $f(44), g(33), h(22)$  larni kamayish tartibida yozing.

Javob:

@matematikaflly

99. Agar  $\sin x + \cos x = 1,12$  bo'lsa,  $x$  qaysi chorakda joylashishi mumkin?

Javob:

100. Agar  $\vec{a}(-1; 5; x)$  va  $\vec{a}(1; 5; -7)$  vektorlar perpendikulyar bo'lsa,  $x$  ning qiymatini toping.

Javob:

101. Tengsizlikni yeching.

$$\left| \frac{6 - 3x}{1 + 3x} \right| > 0$$

Javob:

@matematikaflly

102.  $7x^3 - 14x - 9x^2 + a + 2 = 0$  tenglama 3 ta ildizga ega, ikkita ildizi qarama-qarshi bo'lsa,  $a^2 + 3 = ?$

Javob:

@matematikaflly

103. Teng yonli uchburchakning asosidagi burchagi  $30^\circ$  ga, yuzi  $4\sqrt{3}$  ga teng bo'lsa, uning uchidan tushirilgan balandligini toping.

Javob:

@matematikaflly

104. To'g'ri burchakli trapetsiyaning diagonali kata yon tomoniga teng, balandligi 6, kata yon tomoni 12 ga teng bo'lsa, uning o'rta chizg'ini toping.

Javob:

105.  $\cos \pi x = 1$  (1;6) oraliqdagi ildizlari yig'indisini toping.

Javob:

106.  $ABDC_1B_1C_1D_1$  to'g'ri burchakli parallelepiped berilgan.  $AB=8, BC=2, BB_1=6$  bo'lsa,  $ABCDB_1C_1$  ko'pyoqli figuraning to'la sirtiyuzini toping.

A)76

B)96

C)  $76 + 4\sqrt{10}$

D)  $76 + 9\sqrt{10}$

@matematikaflly

107. Geometrik progressiyaning birinchi va to'rtinchi hadlarining yig'indisi 27 ga, ikkinchi va uchinchi hadlari ko'paytmasi 72 ga teng bo'lsa uning dastlabki to'rtta hadi yig'indisini toping.

Javob:

108.  $|x - 3| < 4$  tengsizlikning butun yechimlari yig'indisini toping.

Javob:

109.  $|x| + |y - 1| \leq 4$  soha yuzini toping?

Javob:

110.  $(2x - 1)^{10} \cdot (x + 1)^2$  ko'phadning koefitsiyentlari yig'indisini toping.

Javob:

111. 10 kishi tennis musobaqasida oltin, kumush, bronza medallarini necha xil usulda olishi mumkin.

Javob:

112. Uchta sonning uchinchi ikkinchisidan nechta ortiq bolsa, ikkinchi birinchisidan shuncha ortiq, bu sonlardan ikkita kichigining kopaytmasi 378, ikkita kattasining kopaytmasi 504 ekanligi ma'lum, shu uchta sondan birinчисini toping

Javob:18

@matematikaflly

**113.** Uchta sonning uchinchisi ikkinchisidan nechta ortiq bolsa, ikkinchisi birinchisidan shuncha ortiq, bu sonlardan ikkita kichigining kopaytmasi 108, ikkita kattasining kopaytmasi 180 ekanligi ma'lum, shu uchta sondan ikkinchisini toping.  
Javob:

**114.** Teng yonli trapetsiyaning pastki asosi 30 sm ga, ustki asosi esa 18 sm ga teng. Bu trapetsiyaning diagonallari o'zaro perpendikulyar. Uning yuzini toping.  
A) 529 B) 576 C) 900 D) 484

**115.** Teng yonli trapetsiyaning pastki asosi 36 sm ga, ustki asosi esa 50 sm ga teng. Bu trapetsiyaning diagonallari o'zaro perpendikulyar. Uning yuzini toping.  
A) 1849

**116.** 5;9;13 ... ketma-ketlikning nechta hadining yig'indisi 13705 bo'ladi?  
Javob:

**117.**  $f(x) = \begin{cases} 2b^2x^2 + 2ax + 2; & x \geq 2 \\ x^2 + 2bx + 1; & x < 2 \end{cases}$   
 $f'(1) = 2; f'(3) = 4$  bo'lsa,  
 $(a + b)^3 = ?$   
Javob:

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**118.** Bir burchagi 60° bo'lgan to'g'ri burchakli uchburchakka tomoni 6 sm ga teng bo'lgan romb shunday ichki chizilganki, 60° li burchak ular uchun umumiy, rombnings barcha uchlari uchburchakning tomonlarida yotadi. Uchburchakning yuzini toping.  
A)  $\frac{27\sqrt{3}}{2}$  B)  $\frac{81\sqrt{3}}{2}$   
C)  $\frac{81\sqrt{3}}{4}$  D)  $\frac{81\sqrt{3}}{8}$

**119.** Bir burchagi 60° bo'lgan to'g'ri burchakli uchburchakka tomoni 6 sm ga teng bo'lgan romb shunday ichki chizilganki, 60° li burchak ular uchun umumiy, rombnings barcha uchlari uchburchakning tomonlarida yotadi. Uchburchakning perimetrini toping.  
Javob:

**120.** Ifodani soddalashtiring.  
$$\frac{27 - \log_a^3 b^3}{(\log_a b + \log_b a + 1) \cdot \log_a \frac{a}{b}} \cdot \log_{b^9} a$$
  
A) 3 B) 9 C) 6 D) 4

**121.**  $\sqrt{4^8 + 2 \cdot 6^8 + 9^8} - \sqrt{4^7 + 6^8 + 9^8}$  ni hisoblang.  
A) 64 B) 512 C) 128 D) 256

**122.**  $\sqrt{4^{19} + 6^{20} + 9^{20}} + \sqrt{4^{19} - 6^8 + 9^8}$  ni hisoblang.  
Javob:

**123.**  $\sqrt{4^{12} + 6^{13} + 9^{13}} - \sqrt{4^{12} - 6^{13} + 9^{13}}$  ni hisoblang.  
Javob:

**124.** Bir nuqtadan aylanaga ikkita urinma o'tkazilgan. Har bir urinmaning uzunligi 20 sm, urinish nuqtalari orasidagi masofa 24 sm. Aylana uzunligini toping.  
A) 15

**125.** Bir nuqtadan aylanaga ikkita urinma o'tkazilgan. Har bir urinmaning uzunligi 15 sm, urinish nuqtalari orasidagi masofa 14,4 sm. Tekislikning shu aylana bilan chegaralangan qismi yuzini toping.  
Javob:

**126.** Agar  $f(x) = 6 + 5tg^2 2x$  bo'lsa,  $f'(\pi)$  ni hisoblang.  
A) 0 B) 2 C) 5 D) 1



127. Agar  $f(x) = 4 + 3tg^2 2x$  bo'lsa,  $f'(\pi)$  ni hisoblang.

128. Agar  $f(x) = 5 - tg^2 2x$  bo'lsa,  $f'(\pi)$  ni hisoblang.

129. Agar  $f(x) = 5tg^2 2x$  bo'lsa,  $f'(\pi)$  ni hisoblang.  
A) 20 B) 1 C) 0 D) -1

130. Agar  $f(x) = \frac{e^x}{\ln x} + \sin 3$  bo'lsa,  $f'(e) = ?$   
A)  $e$  B)  $\frac{e^{e-1}(e-1)}{e}$   
C)  $e^{e-1}(e-1)$  D)  $e^e$

131.  $\int_1^2 \frac{3}{2x-1} dx$  ni hisoblang.  
A)  $\frac{3}{2} \ln 3$  B)  $\ln 3$  C)  $\ln 9$  D) 2

132.  $\int_{-2}^1 |x-2| dx$  ni hisoblang.  
Javob:

133.  $\int_0^2 (|x| + 1) dx$  ni hisoblang.  
Javob:

134. a ning qanday qiymatlarida  $\int_3^a (3x-1) dx = 4$  tenglik o'rinli bo'ladi?  
A)  $\pm 3$  B)  $\pm 5$   
C)  $\frac{1 \pm 2\sqrt{22}}{3}$  D)  $\frac{2 \pm \sqrt{22}}{3}$

135. Hisoblang.

$$\sqrt[3]{\frac{12}{5}} \cdot \sqrt{\frac{244}{15 \cdot (38^2 - 23^2)}}$$

Javob:

136. Hisoblang.  
$$\frac{(\sqrt{5} - \sqrt{11}) \cdot (\sqrt{33} - \sqrt{15} + \sqrt{22} - \sqrt{10})}{\sqrt{75} - \sqrt{50}}$$

A) 2.4 B) -2,4 C) 1.2 D) -1,2

137. Hisoblang.

$$\frac{(\sqrt{5} + \sqrt{11}) \cdot (\sqrt{33} - \sqrt{15} + \sqrt{22} - \sqrt{10})}{\sqrt{75} + \sqrt{50}}$$

A) 2.4 B) -2,4 C) 1.2 D) -1,2

138.  $\int_0^{\frac{\pi}{2}} \sin(2x + \frac{\pi}{3}) dx$  integralni hisoblang.

A) 1,25 B) 1,5 C) 0,25 D) 0,5

139.  $\int_0^{\frac{\pi}{2}} \frac{\cos x dx}{1 + \sin^2 x}$  integralni hisoblang.  
Javob:

140.  $\int_0^{\frac{\pi}{2}} \cos 3x dx$  integralni hisoblang.

A) 0.6 B) -0,(3) C) -0,(6) D) 0,3

141. a ning qanday eng kichik butun qiymatida  $-x^2 - 10x + 5 < a$  tengsizlik x ning barcha qiymatlarida o'rinli bo'ladi?

A) 31 B) 32 C) 30 D) 29

142. a ning qanday eng kichik butun qiymatida  $4x^2 - 4x + 1 > a$  tengsizlik x ning barcha qiymatlarida o'rinli bo'ladi?

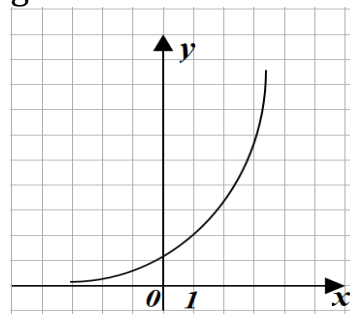
Javob:

143. Ushbu  $\frac{5}{|x+2|+2} > |x+2| - 2$

tengsizlikni qonoatlantiruvchi butun sonlar nechta?

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

144. Grafik ko'rinishda berilgan funksiyani toping.



A)  $y = \log_2 x$  B)  $y = 2^x$   
C)  $y = (\frac{1}{2})^x$  D)  $y = e^x$

145. Ifodaning qiymatini toping.

$$\frac{\left(\frac{1}{18}\right)^5 \cdot 64 \cdot \left(\frac{1}{27}\right)^{-4} + \left(\frac{1}{6}\right)^{-2}}{\left(\frac{2}{3}\right)^{-2}}$$

- A) 18    B) 12    C) 24    D) 48

146. Ifodani soddalashtiring.

$$\cos^4 x + \sin^2 x \cdot \cos^2 x$$

Javob:

147. Ifodani soddalashtiring.

$$7\sin^2 x - 1 + 7\cos^2 x$$

Javob:

148. Ifodani soddalashtiring.

$$7\sin^2 x - 5 + 7\cos^2 x$$

Javob:

149. Ifodani soddalashtiring.

$$-4\sin^2 x - 1 - 4\cos^2 x$$

Javob:

150. Ifodani soddalashtiring.

$$\cos x + \operatorname{tg} x \cdot \sin x$$

Javob:

151.  $\sin x = \frac{1}{2}$  bo'lsa,  $6,8 + 2\cos^2 x$  ni hisoblang.

Javob:

152.  $a=6$  bo'lsa, ifodani soddalashtiring:

$$\frac{\left(25^{\frac{1}{2\log_4 25} + 2\log_2 \log_2 a^{2\log a^4}}\right) \cdot 4^{-\frac{2}{\log_3 4}} - a^2}{1 - a}$$

- A) 6    B) 8    C) 5    D) 7

153.  $a=4$  bo'lsa, ifodani soddalashtiring:

$$\left(25^{\frac{1}{2\log_4 25} + 2\log_2 \log_2 a^{2\log a^4}}\right) \cdot 4^{-\frac{2}{\log_3 4}} - a^2$$

Javob:

154. Ifodani soddalashtiring:

$$\sqrt[5]{b^5} - \sqrt[4]{a^4} + \sqrt[6]{b^6} - \sqrt[9]{b^9}$$

bu yerda  $b < 0$ .

- A) 4b    B) 0; 4b    C) 0; -4b    D) 0

155.  $x^3 = \left(\frac{1}{3}\right)^x + 1$  tenglamaning nechta yechimi bor?

- A) 0    B) 1    C) 7    D) 4

156. Ushbu  $\log_{x^2} 13 = \log_{4-3x} 13$  tenglamani ildizi 5 dan qancha kam?

- A) 9    B) 5    C) 10    D) 12

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157.  $\frac{(5^x - 25) \cdot (7^x - 7)}{\sqrt{7 - 5x}} = 0$  tenglamaning ildizi 5 dan qancha kam?

- A) 4    B) 10    C) 6    D) 8

158.  $\frac{(5^x - 25) \cdot (7^x - 49)}{\sqrt{7 + 5x}} = 0$  tenglamaning ildizi 5 dan qancha kam?

Javob:

159. Quyidagi tasdiqlardan qaysilari to'g'ri?

- 1) Trapetsiyaning o'rta chizig'i uning diagonallarini teng ikkiga bo'ladi;
- 2) Agar teng yonli trapetsiyaning diagonali uning katta asosidagi burchagi bissektrisasi bo'lsa, u holda katta asos yon tomonga teng bo'ladi;
- 3) Agar teng yonli trapetsiyaning diagonali uning kichik asosidagi burchagi bissektrisasi bo'lsa, u holda katta asos yon tomonga teng bo'ladi.

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

160. Uchburchak katetlaridan biri 28 ga teng (16 lik sanoq sistemasi), ikkinchisi esa 2A ga (16 lik sanoq sistemasi).

Uchburchakning gipotenuzasini 16 lik sanoq sistemasida toping.

Javob:

161. Uchburchak uchlarining koordinatalari  $(-4; 2); (6; 5); C(1; -4)$ . A uchidan tushirilgan balandligi orqali o'tuvchi to'g'ri chiziq tenglamasini tuzing.

Javob:

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162.  $A=\{3;4;5;6;7;8;9;10;11\}$  va  $B=\{5;6;7;8;9;11\}$  to'plamlar berilgan bo'lsa, A va B to'plamlar kesishmasining qism to'plamlari sonini toping.  
 A) 64    B) 32    C) 128    D) 8

163.  $A \cap B = \{b; c; d\}$ ,  $A \cap C = \{a; b\}$  bo'lsa,  $A \cap (B \cup C)$  to'plam elementlarini toping.  
 A)  $\{a; b\}$                       B)  $\{a; b; c; d\}$   
 C)  $\{a; b; c\}$                   D)  $\{b\}$   
 $A \cap B = \{b; c; d\}$ ,  $A \cap C = \{a; d\}$  bo'lsa,  $A \cap (B \cup C)$  to'plam elementlarini toping.  
 Javob:

164.  $A \cap B = \{b; c; d\}$ ,  $A \cap C = \{a; d\}$  bo'lsa,  $A \cap (B \cup C)$  to'plam elementlarini toping.  
 Javob:

165.  $2^{\cos x} + 2^{\sin x} = 3$  tenglamani yeching.  
 Javob:

166.  $2^{\cos^2 x} + 2^{\sin^2 x} = 3$  tenglamani yeching.  
 Javob:

167.  $A \cap B = \{b; c; d\}$ ,  $A \cap C = \{a; b\}$  bo'lsa,  $A \cap (B \cup C)$  to'plam elementlarini nechta?  
 A) 2    B) 4    C) 3    D) 1

168. Teng yonli uchburchakning asosi 16 sm ga, yon tomoni esa 10 sm ga teng. Bu uchburchakka ichki va tashqi chizilgan aylanalar markazlari orasidagi masofani toping.  
 Javob:

169. Teng yonli uchburchakning asosi 8 sm ga, yon tomoniga tushirilgan mediana 10 sm ga teng. Yon tomonini (sm) toping.  
 A)  $2\sqrt{17}$                       B)  $4\sqrt{7}$   
 C)  $4\sqrt{17}$                       D)  $6\sqrt{17}$

170. Teng yonli uchburchakning yon tomoni 20 ga, asosidagi burchak kosinusi  $\frac{2\sqrt{6}}{5}$  ga teng bo'lsa, asosiga tushirilgan balandligini toping.  
 Javob:

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171. Og'ma prizmaning asosi parallelogramlardan iborat bo'lib, uning asosi tomonlari 5 va 4 ga va ular orasidagi burchak  $45^\circ$  ga teng. Yon qirradi uzunligi 4 ga va asos tekisligi bilan  $30^\circ$  li burchak tashkil qiladi. Prizmaning hajmini toping.  
 Javob:

172. Og'ma prizmaning asosi parallelogramlardan iborat bo'lib, uning asosi tomonlari 3 va 4 ga va ular orasidagi burchak  $60^\circ$  ga teng. Yon qirradi uzunligi 4 ga va asos tekisligi bilan  $30^\circ$  li burchak tashkil qiladi. Prizmaning hajmini toping.  
 Javob:

173. Tenglamani ildizlari yig'indisini toping:

$$4 + \frac{x}{3 + \frac{x}{2 + \frac{x}{4 + \dots}}} = 5$$

A) 5    B)  $\frac{15}{4}$     C) -2    D)  $-\frac{2}{3}$

174. Agar  $m = a \cos x + b \sin x$  va  $n = -\sqrt{a^2 + b^2}$  bo'lsa,  $x$  ning istalgan qiymati uchun quyidagilardan qaysi biri o'rinli?  
 A)  $m > n$                       B)  $m < n$   
 C)  $m \geq n$                       D)  $m \leq n$

175.  $\sqrt{x^2 - x - 2} \geq 2x + 3$  tengsizlikni qanoatlantiruvchi eng katta natural sonni toping.  
 Javob:

176.  $x\sqrt{x} - 9\sqrt{x} = 8$  bo'lsa,  
 $x - \sqrt{x}$  ning qiymatini toping.  
 A)8 B)6 C)3 D)4

177. Arifmetik progressiyaning oltinchi va o'ninchi hadlari yi'g'indisi 38 ga, to'qqizinchi va o'n birinchi hadlari yig'indisi esa 23 ga teng bo'lsa, arifmetik progressiyaning dastlabki o'n bechta hadlari yig'indisini toping.  
 A) 285

178. Ildizlari  $x_1 = \frac{1}{10+6\sqrt{2}}$  va  $x_2 = \frac{1}{10-6\sqrt{2}}$  bo'lgan kvadrat tenglama tuzing.  
 A)  $28x^2 - 20x + 1 = 0$   
 B)  $28x^2 - 20x - 1 = 0$   
 C)  $28x^2 + 20x + 1 = 0$   
 D)  $-28x^2 - 20x + 1 = 0$

179.  $[\pi^2] + [2,9]^2 + [15, (99)]$  ni hisoblang.  
 $[a]$  - a ning butun qismi.  
 Javob:

180.  $\frac{4}{1+\frac{3}{x-1}}$  kasr ma'noga ega bo'lmaydigan barcha x larning yig'indisini toping  
 A)0 B)1 C)-1 D)-2

181.  $y = x^2 - 4x + 7$  funksiya grafigining  $(-1;1)$  nuqtaga nisbatan simmetrik bo'lgan tenglamasini tuzing.  
 Javob:

182.  $y = |3x + 2| + |2x - 3|$  funksiyaning eng kichik qiymatini toping,  
 Javob:

183. Agar  $f(2x+1)=4x+5$  bo'lsa,  $f(x)$  nimaga teng?  
 Javob:

184.  $y = x^2$  funksiya grafigini o'ngga ikki birlik, yuqoriga uch birlik siljitish (parallel ko'chirish) natijasida hosil bo'lgan parabola tenglamasini toping:  
 A) $y = x^2 - 4x + 7$   
 B)  $y = x^2 - 4x + 3$   
 C)  $y = x^2 - 3x + 4$   
 D)  $y = x^2 - 2x + 3$

185.  $y = 4x - x^2$  va  $y = x^2 - 6x + k$  funksiyalarga o'tkazilgan umumiy urinma  $M(1;3)$  nuqtadan o'tsa, k ning qiymatini toping.  
 Javob:

186. Funksiyaning monoton o'sish oralig'ini toping.  
 $y = |x - 4| - x^2$   
 Javob:

187.  $f(x + y, x - y) = 4x^2 + 8xy$  funksiya berilgan.  $f(2x, 3x)$ ni toping.  
 A) $3x^2 + 48$  B) $5x^2 + 40$   
 C)  $15x^2$  D)  $12x+36$

188.  $\begin{cases} x + y = a - 1 \\ xy = a^2 - 7a + 14 \end{cases}$  sistemada  $x^2 + y^2$  minimum qiymat qabul qilsa, a ning qiymatini toping.  
 Javob:

189.  $\sin x = \frac{1}{x}$  tenglama  $[-4\pi; 4\pi]$  kesmada nechta yechimga ega?  
 Javob:

190. Tengsizlikni yeching:  $|x - 2| \leq 4$   
 Javob:

191.  $(x - 3a)(x - a - 3) < 0$  bo'lib,  $1 \leq x \leq 3$  oraliqda bajarilsa, a ning nechta butun qiymati mavjud?

Javob:

192.  $\frac{a+3b}{a+b-1} + \frac{a+b-1}{a+b-3} = 4$  bo'lsa, a+b ni toping

A)  $\frac{14}{5}$  B)  $\frac{12}{5}$  C)  $\frac{11}{5}$  D) Tjy

193. Tengsizlikni yeching:

$$|3 - |x - 2|| \leq 1$$

Javob:

194. Tengsizlikni yeching:

$$\frac{1}{x-1} + \frac{1}{|x|+1} \geq \frac{1}{|x|-1}$$

Javob:

195. Tengsizlikni yeching:

$$\log_{0.2}^2(x+1) < 4$$

Javob:

196. Tengsizlikni yeching:

$$\log_{0.2}^2(x+1) > 4$$

Javob:

197. Tengsizlikni yeching:

$$\log_{x-2}(2x-7) > 1$$

Javob:

198. Agar  $f(x) = (a + b - 4) \cdot x^3 + 2x^2 + (b - 1)x$  juft funksiya berilgan bo'lsa,  $f(a + 2b)$  ning qiymatini toping

A)18 B)36 C)50 D)0

199. Ahmad bir kun, Arslon ikki kun ishlaganda, birishning 3/8 qismini bajarishadi. Agar Ahmad 3 kun, Arslon 2 kun ishlasa, aynan o'sha ishning 5/8 qismini bajarishadi. Arslon bir o'zi ushbu ishni necha kunda tamomlaydi?

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

200. Tengsizlikni yeching:

$$\frac{3x^2 - 6x + 13}{\log_{0.2}(x^2 + 4)} < 0$$

Javob:

201. Tengsizlikni yeching:

$$2^{\log_{0.2}x \cdot 2\log_{0.2}5x} \geq 1$$

Javob:

202. Tengsizlikni yeching:

$$2^{\log_{0.2}x \cdot 2\log_{0.2}5x} \leq 1$$

Javob:

203. Tengsizlikni yeching:

$$2^{\log_{0.8}x \cdot 2\log_{0.8}1.25x} \geq 1$$

Javob:

204. Tengsizlikni yeching:

$$2^{\log_{0.8}x \cdot 2\log_{0.8}1.25x} \leq 1$$

Javob:

205.  $2^{\sqrt{x+1}} \geq 2^{4-\sqrt{x+1}}$  tengsizlikni nechta butun son qanoatlantirmaydi?

Javob:

206.  $2^{\sqrt{x+1}} < 2^{4-\sqrt{x+1}}$  tengsizlikni yeching.

Javob:

207. Funksiyaning aniqlanish soxasini

toping:  $y = \sqrt{\frac{|x+2|-3}{x^2+2}}$

Javob:

208. Funksiyaning aniqlanish soxasini toping:

$$y = \sqrt{\frac{|x+2|-3}{x^2-2}}$$

Javob:

209. Funksiyaning aniqlanish soxasini toping:

$$y = \sqrt{\frac{|x-2|-3}{x^2+2}}$$

Javob:



210.  $(\log_2(x+2) - 3)(\log_2(x+2) + 4) > 0$   
tengsizlikni yeching.

Javob:

211.  $(\log_2(x+2) - 3)(\log_2(x+2) + 4) < 0$   
tengsizlikni yeching.

Javob:

212.  $(\log_2(x-2) - 3)(\log_2(x-2) + 4) > 0$   
tengsizlikni yeching.

Javob:

213.  $(\log_2(x+2) + 3)(\log_2(x+2) - 4) > 0$   
tengsizlikni yeching.

Javob:

214.  $2^x = x + 2$  tenglama nechta yechimga ega?

Javob:

215.  $2^x = x - 2$  tenglama nechta yechimga ega?

Javob:

216.  $2^{x-1} = x + 2$  tenglama nechta yechimga ega?

Javob:

217.  $2^{x+1} = x - 2$  tenglama nechta yechimga ega?

Javob:

218.  $f(x) = 6^x$  bo'lsa,  $\left(f(-2) \cdot f\left(\frac{1}{2}\right)\right)^2$

ning qiymatini toping.

Javob:

219.  $f(x) = 6^x$  bo'lsa,  $\left(f(2) \cdot f\left(-\frac{1}{2}\right)\right)^2$

ning qiymatini toping.

Javob:

220.  $f(x) = 6^x$  bo'lsa,  $\left(f(-2) \cdot f\left(\frac{1}{2}\right)\right)^3$

ning qiymatini toping.

Javob:

221.  $f(x) = 7^x$  bo'lsa,  $\left(f(-2) \cdot f\left(\frac{1}{2}\right)\right)^2$

ning qiymatini toping.

Javob:

222.  $\overline{ab}$  va  $\overline{ba}$  ikki honali sonlar va

$\sqrt[1999]{\frac{\overline{ab-ba}}{\overline{ba-ab}}} = x$  bo'lsa,  $(x^x)^x$  ni

hisoblang. ( $i$  – kompleks son)

A)  $i$       B)  $i^2$       C)  $i^3$

D) aniqlab bo'lmaydi

223.  $f(x) = 10^x$  bo'lsa,  $5f(-3) + 8f(-2)$  ni hisoblang.

Javob:

224.  $f(x) = 10^x$  bo'lsa,  $5f(-1) - 8f(-2)$  ni hisoblang.

Javob:

225.  $f(x) = 10^x$  bo'lsa,  $5f(3) + 8f(2)$  ni hisoblang.

Javob:

226.  $f(x) = \frac{3^{x+1} + 3^{x+3} + 3^{x+2}}{5^{x+2} + 14 \cdot 5^x}$  berilgan bo'lsa,  $9f(-2)$  ni hisoblang.

Javob:

227.  $f(x) = \frac{3^{x+1} + 3^{x+3} + 3^{x+2}}{5^{x+2} + 14 \cdot 5^x}$  berilgan bo'lsa,  $9f(2)$  ni hisoblang.

Javob:

228.  $f(x) = \frac{3^{x+1} + 3^{x+3} + 3^{x+2}}{5^{x+2} + 14 \cdot 5^x}$  berilgan bo'lsa,  $9f(-8)$  ni hisoblang.

Javob:

229.  $6^x - 6^{-x} = 6$  bo'lsa,  $(6^x - 6) \cdot 6^x$  nimaga teng?

Javob:

230.  $6^x - 6^{-x} = 6$  bo'lsa,  $(6^x + 6) \cdot 6^x$  nimaga teng?

Javob:

231.  $\frac{2^a+4\cdot 2^b}{2^a-2\cdot 2^b} = -7$  bo'lsa,  $2^{a-b}$  ning qiymatini toping.  
Javob:1,25

232.  $\frac{2^a+4\cdot 2^b}{2^a-2\cdot 2^b} = 7$  bo'lsa,  $2^{a-b}$  ning qiymatini toping.  
Javob:

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233.  $\frac{2^a+4\cdot 2^b}{2^a-2\cdot 2^b} = 5$  bo'lsa,  $2^{a-b-1}$  ning qiymatini toping.  
Javob:

234.  $x, y$  natural sonlari  $\frac{1}{x+y-14} - \frac{1}{x-y-6} = 1$  shartni qanoatlantirsa,  $x-y$  ni toping.  
A)0 B)2 C)3 D)4

235.  $f(x) = \frac{7\cdot 2^x+5\cdot 2^{-2x}}{2}$  va  $g(x) = \frac{7\cdot 2^x-5\cdot 2^{-2x}}{2}$  tenglikdan foydalanib,  $f^2(x) - g^2(x)$  ayirmani toping.  
Javob:

236.  $f(x) = 7^x, g(x) = 8^x, h(x) = 9^x$  bo'lsa,  $f(44), g(33), h(22)$  larni kamayish tartibda yozing.  
Javob:

237.  $f(x) = 7^x, g(x) = 8^x, h(x) = 9^x$  bo'lsa,  $f(44), g(33), h(22)$  larni o'sish tartibda yozing.  
Javob:

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238.  $f(x) = 7^x, g(x) = 8^x, h(x) = 9^x$  bo'lsa,  $f(40), g(30), h(20)$  larni kamayish tartibda yozing.  
Javob:

239.  $f(x) = 7^x, g(x) = 8^x, h(x) = 9^x$  bo'lsa,  $f(40), g(30), h(20)$  larni o'sish tartibda yozing.  
Javob:

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240.  $f(x) = \left(2^{\frac{3x}{2}} - 3^{\frac{3x}{2}}\right) + \frac{2\cdot(2^x+3^x+6^{\frac{x}{2}})}{\left(\frac{x}{2^4-3^4}\right)^2 + \left(\frac{x}{2^4+3^4}\right)^2}$  bo'lsa,  $f(2)$  ni toping.  
Javob:

241.  $f(x) = \left(2^{\frac{3x}{2}} - 3^{\frac{3x}{2}}\right) + \frac{2\cdot(2^x+3^x+6^{\frac{x}{2}})}{\left(\frac{x}{2^4-3^4}\right)^2 + \left(\frac{x}{2^4+3^4}\right)^2}$  bo'lsa,  $f(-2)$  ni toping.  
Javob:

242.  $f(x) = \left(2^{\frac{3x}{2}} - 3^{\frac{3x}{2}}\right) + \frac{2\cdot(2^x+3^x+6^{\frac{x}{2}})}{\left(\frac{x}{2^4-3^4}\right)^2 + \left(\frac{x}{2^4+3^4}\right)^2}$  bo'lsa,  $f(3) + f(2)$  ni toping.  
Javob:

243. Agar  $5^x - 5^y = 3, x + y = 3$  bo'lsa,  $5^{2x} + 5^{2y} + 25^x \cdot 5^y - 5^x \cdot 25^y$  ning qiymatini toping.  
Javob:

244. Agar  $5^x - 5^y = 7, x + y = 7$  bo'lsa,  $5^{2x} + 5^{2y} + 25^x \cdot 5^y - 5^x \cdot 25^y$  ning qiymatini toping.  
Javob:

245. Agar  $5^x - 5^y = 3, x + y = 3$  bo'lsa,  $5^{2x} - 5^{2y} + 25^x \cdot 5^y - 5^x \cdot 25^y$  ning qiymatini toping.  
Javob:

246.  $y = tg^2\left(\frac{x}{3} - \frac{\pi}{4}\right) + 2\sin x$  funksiyaning eng kichik musbat davrini toping.  
A)  $6\pi$  B)  $2\pi$  C)  $3\pi$   
D) davriy emas

247.  $y = 97tg^2\left(\frac{x}{3} + \frac{\pi}{4}\right) + 2\sin x$  funksiyaning eng kichik musbat davrini toping.  
A)  $6\pi$  B)  $2\pi$  C)  $3\pi$   
D) davriy emas

248.  $y = 97tg^2\left(\frac{x}{3} - \frac{\pi}{4}\right) + 2\sin(x + 2018)$

funksiyaning eng kichik musbat davrini toping.

- A)  $6\pi$  B)  $2\pi$  C)  $3\pi$  D) davriy emas

249.  $(5^{\log_3 5})^{\log_5 3}$  ni hisoblang.

Javob:

250.  $\sqrt{\log_{16} 4 + \log_{16} 24 - \log_{16} 6}$  ni hisoblang.

Javob:

251.  $\sqrt{\log_{16} 4 \cdot (\log_{16} 24 - \log_{16} 6)}$  ni hisoblang.

Javob:

252. Perimetri 40 sm bo'lgan parallelogramda diagonallar o'tkazilgan. Ikkita qo'shni uchburchaklar perimetrlari orasidagi ayirma 10 sm ga teng.

Parallelogramning katta tomonining uzunligini toping.

- A) 10 sm B) 20 sm C) 5 sm D) 15 sm

253. Perimetri 32 sm bo'lgan parallelogramda diagonallar o'tkazilgan. Ikkita qo'shni uchburchaklar perimetrlari orasidagi ayirma 8 sm ga teng.

Parallelogramning kichik tomonining uzunligini toping.

- A) 4 sm B) 3 sm C) 5 sm D) 12 sm

254. Perimetri 36 sm bo'lgan parallelogramda diagonallar o'tkazilgan. Ikkita qo'shni uchburchaklar perimetrlari orasidagi ayirma 10 sm ga teng. Parallelogramning tomonlari uzunliklarini toping.

Javob:

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255. Tenglamalar sistemasini yeching:

$\begin{cases} 2^x \cdot 7^y = 28 \\ 2^x + 7^y = 11 \end{cases}$

- A) (2;1);  $(\log_2 7; 2\log_7 2)$  B) (2;1);  $(\log_2 7; 2\log_2 7)$  C) (-2;1);  $(\log_2 7; 2\log_7 2)$  D) (2;2);  $(\log_2 7; 2\log_7 2)$

256. Tenglamalar sistemasini yeching:

$\begin{cases} 11^x + 8^y = 75 \\ 3 \cdot 11^x + 8^y = 97 \end{cases}$

Javob:

257.  $\frac{x^7 - 4x^5 + 4x^2 - 7x - 2}{x^7 - 4x^5 + 3x^2 - 4x - 4} = 1$  tenglamaning barcha ildizlari yig'indisini toping.

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

258.  $\left| \frac{x}{1+4x} \right| > 0$  tengsizlikni yeching.

- A)  $(-\infty; -\frac{1}{4}) \cup (-\frac{1}{4}; 0) \cup (0; +\infty)$  B)  $(-\infty; -\frac{1}{4}) \cup (-\frac{1}{4}; +\infty)$  C)  $(-\infty; -\frac{1}{4}) \cup (0; +\infty)$  D) TJY

259.  $y = \arcsin(|x| + |x - \frac{1}{2}|)$

funksiyaning qiymatlar sohasini toping.

Javob:

260. Toq sonning o'zidan keyin keluvchi 3 ta toq son bilan yig'indisi 49 dan katta, ushbu shartni qanoatlantiruvchi toq sonlardan eng kichigini toping.

- A) 15 B) 9 C) 11 D) 13

261.  $x^9 \cdot |x^2 + 4x + 4| < 0$  tengsizlik

$[-8; 1]$  kesmada nechta butun yechimga ega?

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

262.  $y = (x + 1)^{-\frac{4}{7}}$  funksiyaning aniqlanish sohasini toping.  
 A)  $(-\infty; -1) \cup (-1; +\infty)$   
 B)  $(-\infty; 1) \cup (1; +\infty)$   
 C)  $x=1$  D) to'g'ri javob yo'q  
 E)  $(-1; 1)$

263. Hisoblang.  

$$\frac{125^{\frac{1}{2}} - 123^{\frac{13}{12}}}{1 - \frac{1}{1 - \frac{1}{2}}}$$
  
 A) -2 B) -1 C) 1 D) 2 E) 4

264.  $(a + 1)x^2 - 3ax + 4a = 0$  tenglama ning qanday qiymatida 2 ta haqiqiy ildizga ega?  
 A)  $\emptyset$  B)  $(-1\frac{9}{7}; -1) \cup (-1; 0)$   
 C)  $(-1\frac{9}{7}; 0)$  D)  $(-\infty; +\infty)$

265.  $\int e^{\sqrt{x}} dx$  integralni hisoblang.  
 A)  $2e^{\sqrt{x}} \cdot (\sqrt{x} + 1) + C$   
 B)  $e^{\sqrt{x}} \cdot (\sqrt{x} - 1) + C$   
 C)  $2e^{\sqrt{x}} \cdot (\sqrt{x} - 1) + C$   
 D)  $2 \cdot (\sqrt{x} - 1) + C$

266.  $(a + 2b)^5$  ko'phadni 4-o'rinda turgan koefitsiyentini toping.  
 A) 80 B) 130 C) 110 D) 70

267.  $\sin 6 + \sin\{2\pi\}$  ni hisoblang (bu yerda  $\{a\}$ - a ning kasr qismi).  
 A) 1 B) 0 C) -1 D) 0.5

268. Cheksiz kamayuvchi geometrik progressiyaning barcha hadlari yig'indisi  $f(x) = x^3 + 3x - 9$  funksiyaning  $[-2; 3]$  kesmadagi eng katta qiymatiga, va  $b_1 - b_2 = f'(0)$  ga teng bo'lsa, cheksiz kamayuvchi geometrik progressiyaning maxrajini toping.  
 A) -8 B) -6  
 C) 2 D)  $\frac{2}{3}$

269. Musbat sonlardan tashkil topgan  $a_1, a_2, \dots$  ketma-ketligi uchun  $a_1 = a_2 = 1$  va barcha natural n da  $a_{n+2} = a_n \cdot a_{n+1}$  shart bajarilsin, ketma-ketlikning 100-hadini toping.  
 A) 1 B) 5 C) 100 D) 3

270. Integralni hisoblang.  

$$\int [(1 + \operatorname{tg}(20 + x)) \cdot (1 + \operatorname{tg}(25 - x))] dx$$
  
 A)  $2x + C$  B)  $2x^2 + C$   
 C)  $x + C$  D)  $x^2 + C$  E)  $3x + C$

271. Agar ABC uchburchak A, B va C burchaklari uchun  $3\sin B + 4\cos C = 6$ ;  $4\sin C + 3\cos B = 1$  bo'lsa, A burchak necha gradus?  
 A)  $30^\circ$  B)  $45^\circ$  C)  $60^\circ$  D)  $75^\circ$  E)  $90^\circ$

272.  $x + \sqrt{x + \frac{1}{2}} + \sqrt{x + \frac{1}{4}} = 2$  tenglamani yeching.  
 A)  $2 + \sqrt{2}$  B)  $2 - \sqrt{2}$  C) 0 D) 1

273.  $f(x) = g(h(x)); h(x) = 2x^2 - 3x$ ;  $f(-1) = 14$  bo'lsa,  $g'(5) = ?$   
 A) 2 B) -1, (9) C) 1, 9 D) 1

274.  $y = \frac{3x^2}{(1+x^2) \cdot (4x^2+1)}$  funksiyaning eng katta qiymatini toping.  
 A) 1 B) 0,5  
 C) 0,3 D) 0,(3)

275. ABCD qavariq to'rtburchakning AB va CD tomonlarini o'rtalarini tutashtiruvchi kesma 3 ga, BC va AD tomonlari perpendekulyar bo'lsa, diagonallari o'rtalarini tutashtirgan kesmani toping.  
 A) 2,5 B) 5  
 C) 2 D) 3

276. Maktab hovlisida 1006 ta atirgul ekilgan, Nozima barcha atirgullarning yarmini, Shahnoza ham barcha atirgullarning yarmini suv quyib sug'ordi. Bunda 3 ta atirgul ham Nozima ham Shahnoza tomonidan sug'orildi. Nechta atirgul sug'orilmay qoldi?

- A)3 B)80 C)16 D)2

277.  $\lim_{x \rightarrow 3} \frac{f(x)-3}{x^2-9} = 2$  bo'lsa,  $\lim_{x \rightarrow 3} \frac{9-f^2(x)}{x^2-3x}$  ni toping.

- A)-36 B) -24 C) -18 D) -12

278.  $2xy + x + y = 83$  bo'lsa, barcha x va y larning yig'indisini toping.

- A)-4 B)4 C)0 D)1 E)83

279. 1;2;2;3;3;3;4;4;4;4... ketma-ketlikning dastlabki 100 ta hadi yig'indisini toping.

- A) 946 B) 945  
C) 845 D) 846 E) 900

280. a va b manfiy butun sonlar bo'lib,  $a=b+2$  va  $a+b-c=10$  bo'lsa, c ning eng katta qiymatini toping.

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

281.  $\frac{n^2+3n}{n+1}$  kasr butun son bo'ladigan n ning nechta butun qiymati bor?

- A)4 B)3 C)6 D)2

282. Tenglamani yeching:

$$\log_{x+2}(4-x^2) - \frac{1}{16} \log_{x+2}^2(x-2)^2 = 2$$

- A)  $\frac{-5 \pm \sqrt{17}}{2}$  B)  $\frac{-5 + \sqrt{17}}{2}$  C)  $\frac{-5 - \sqrt{17}}{2}$  D)1

283.  $f(x) = x(x+1)(x+2) \dots (x+10)$  bo'lsa,  $f'(0)$  ni toping.

- A)10! B)0 C)350 D)55

284. Basketbol musobaqasida 10 ta o'yinchidan 5 tadan qilib 2 ta guruhni necha xil usul bilan yasash mumkin?

- A)130 B)252 C)120 D)80

285. Markaziy burchagi  $36^\circ$  bo'lgan sektorning yuzi 15 ga teng. Sektor radiusini toping.

- A)  $\sqrt{\frac{150}{\pi}}$  B)  $\sqrt{\frac{45}{\pi}}$  C)  $\sqrt{\frac{25}{\pi}}$  D)  $\sqrt{\frac{60}{\pi}}$

286.  $\frac{\cos 67,5^\circ + \sin 67,5^\circ}{\sin 67,5^\circ - \cos 67,5^\circ}$  ning qiymatini toping.

- A)  $1 - \sqrt{2}$  B)  $1 + \sqrt{2}$  C)  $2 + \sqrt{2}$   
D)  $1 + 2\sqrt{2}$  E)  $2 + 2\sqrt{2}$

287.  $4\sin 10^\circ + \operatorname{tg} 20^\circ \cdot \operatorname{tg} 40^\circ$  ni hisoblang.

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

288.  $\frac{3}{31} + \frac{309}{51} + \frac{429}{71} = a$  bo'lsa,  $\frac{30}{31} + \frac{50}{51} + \frac{70}{71}$  ning qiymatini toping.

- A)  $3 - \frac{a}{3}$  B)  $7 - \frac{a}{3}$  C)  $7 - a$  D)  $3 - a$

289. Konusning hajmi V ga teng, balandligi to'rtta teng qismga bo'lingan va bo'linish nuqtalaridan konus asosiga parallel tekisliklar o'tkazilgan. Hosil bo'lgan eng kichik kesik konusning hajmini toping.

- A)  $\frac{7}{64}V$  B)  $\frac{37}{64}V$  C)  $\frac{63}{64}V$  D)  $\frac{19}{64}V$

290.  $\int x^2 \cdot \sin x dx$  ni hisoblang.

- A)  $(2 + x^2)\cos x + 2x\sin x + C$   
B)  $(2 - x^2)\cos x + 2x\sin x + C$   
C)  $(2 + x^2)\cos x + 2x\cos x + C$   
D)  $(2 + x^2)\cos x - 2\sin x + C$

291.  $f(x) = ax + b$  funksiya uchun  $f(1) \leq f(2), f(4) \leq f(3)$  bo'lsa,  $f(4) - f(2) = ?$

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



292. ABCD trapetsiyaning yuzi 36 ga teng, asoslari DC=6, AB=2, BC tomonidan E nuqta olingan bo'lib, BE=2EC bo'lsa, ADE uchburchak yuzini toping.

- A)12 B)21 C)7 D)16

293. Muntazam ko'pburchakning tomoni unga tashqi chizilgan aylananing 72° li yoyini tortib tura di. Muntazam ko'pburchakning tomonlari sonini toping.

- A)5 B)6 C)8 D)12

294.  $\log_2(x-1)|x-2|=2$  tenglamaning barcha haqiqiy ildizlari nechta?

- A)1 B)2 C)3 D)4 E)0

295. ABC uchburchakning A va C burchaklari 20° va 40° ga, B burchakning bissektrisasi 2 ga teng teng bo'lsa, AC-AB ni toping.

- A)3 B)1 C)2 D)2.5 E) 1.5

296.  $\frac{\sin 53^\circ - \sin 37^\circ}{1 - 2\cos^2 41^\circ}$  ni hisoblang.

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

297.  $2C_{x+1}^2 - A_x^2 = 10$  tenglamani yeching (x natural son).

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

298.  $x^2 - 4|x| - a + 3 = 0$  a ning qanday qiymatida tenglama 4 ta yechimga ega bo'ladi?

- A){-1} B){-1;3} C){3} D)[-1;3]

299. Kater oqimi tezligi 3 bo'lgan daryoda uzoqligi 180 km bo'lgan joyga borib kelishi uchun 25 soat vaqt sarfladi. Kater huddi shu 25 soat suzgan masofani turg'un suvda qancha vaqt bosib o'tadi?

- A)24 B)23 C)20 D)15

300. ABCD parallelogramning dioganallari O nuqtada kesishadi.  $\vec{AC} = k\vec{AO}$  tenglik bajariladigan k ning son qiymatini toping.

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

301. ABC uchburchakda D va E nuqtalar BC tomonni 3 ta teng qismga bo'ladi. (BD=DE=EC), F va G nuqtalar esa AD kesmani 3 ta teng qismga bo'ladi. (AF=FG=GD). AFE uchburchak yuzining ABC uchburchak yuziga nisbatini toping.

- A) $\frac{1}{9}$  B) $\frac{1}{3}$  C) $\frac{1}{12}$  D) $\frac{1}{4}$

302. Piramidaning asosi tomonlari 3,5,6 ga teng bo'lgan uchburchakdan iborat, Piramidaning barcha ikki yoqli burchaklari 45° ga teng bo'lsa, uning hajmini toping

- A)4 B)3 C) $\frac{10}{3}$  D) $\frac{8}{3}$

303. Ifodani soddalashtiring.

$$\frac{a^2 - b^2}{a} \cdot \left( \frac{a^2 - b^2}{(a - b)^2} - \frac{(a - b)^2}{a^2 - b^2} \right)$$

- A) $\frac{a}{b}$  B)4ab C)4a D)4b E)2a-2b

304.  $7x^3 - 4x^2 + 2x + a + 2 = 0$

tenglamada  $x_1 + x_2 = 0$  bo'lsa, a ni toping.

- A) $-3\frac{1}{8}$  B)-1 C)0 D)3 E)3,125

305. a; b va c sonlari o'suvchi geometrik, a; b+2 va c sonlari esa arifmetik progressiyani tashkil etadi. Agar a=1 bo'lsa, a+b+c ning qiymatini toping.

- A) 11 B) 13 C) 15 D) 17

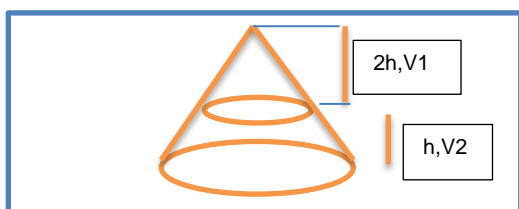
306. ABCD to'g'ri to'rtburchakda AD=2. DA nurda A nuqtadan keyin E nuqta olingan, bunda AE=1 va  $\angle BEC = 30^\circ$ . BE ni toping.

- A) $\sqrt{3}$  B) $\sqrt{5}$  C)2 D)3

307. To'la sirti 48 bo'lgan to'g'ri burchakli parallelepipedning o'lchovlari a, b, c bo'lib,  $\frac{1}{a} + \frac{1}{b} + \frac{1}{c} = \frac{1}{4}$  tenglik o'rinli. parallelepipedning hajmini toping.  
 A)48 B)64 C)72 D)96

308.  $\cos 36^\circ + \cos 108^\circ$  ni hisoblang.  
 A)1 B)0,5 C)2 D) $\frac{4}{5}$

309. Balandligi 3h bo'lgan konus balandligi 2h va h bo'lgan konus va kesik konusga ajratildi, hosil bo'lgan  $V_1$  va  $V_2$  larning nisbatini toping.



A) $\frac{3}{8}$  B) $\frac{8}{19}$  C) $\frac{1}{2}$  D) $\frac{7}{13}$  E) $\frac{4}{5}$

310.  $\arccos(\sin 3)$  ni hisoblang.  
 A) -3 B) 3 C)  $\pi - 3$   
 D)  $3 - \frac{\pi}{2}$  E)  $2\pi - 3$

311. Parallelogrammning diogonallari c va d, tomonlari a va b.  $c^2 \cdot d^2 = a^4 + b^4$  bo'lsa parallelogrammning o'tkir burchakini toping.  
 A)30° B)45° C)60° D)75°

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312. Teng yonli trapetsiyaning dioganali 12 ga teng va bu diagonal katta asos bilan  $0.5 \arcsin \frac{1}{3}$  tashkil qiladi. Trapetsiyaning yuzini toping.  
 A)24 B)18 C)16 D)12

313.  $|\lg|x|| = x + 1$  tenglama nechta yechimga ega?  
 A) 3 B) 2 C) 1 D) 4 E)  $\emptyset$

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314. Soddalashtiring.  
 $\frac{a-b}{a+b} + \frac{b-c}{b+c} + \frac{c-a}{c+a} + \frac{a-b}{a+b} \cdot \frac{b-c}{b+c} \cdot \frac{c-a}{c+a}$   
 A)1 B) (a+b)(a+c)(b+c) C) 0  
 D)(a-b)(c-a)(b-c) E) abc

315. Trapetsining dioganallari 10 va 17 ga, balandligi 8 ga teng bo'lsa, trapetsiya o'rta chizig'ini toping.  
 A)10 B)10,5 C)11 D)11,5

316. A(5;6;7) va B(-5;-8;-6) nuqtalar qaysi nuqtaga nisbatan simmetrik?  
 A) (0;1;0.5) B) (0;-1;0.5)  
 C) (0;1;-0.5) D) (1;0;0.5)

317. Yig'indini hisoblang.  
 $\frac{1}{2!} + \frac{2}{3!} + \dots + \frac{49}{50!}$   
 A)  $1 - \frac{1}{50!}$  B) 1 C)  $1 + \frac{1}{49!}$  D) 2

318. Hisoblang.  
 $\frac{3}{(1 \cdot 2)^2} + \frac{5}{(2 \cdot 3)^2} + \dots + \frac{19}{(9 \cdot 10)^2}$   
 A)0.98 B)0,99 C)1,00 D)1,01

319.  $i^2 = -1$  bo'lsa,  $Z_1 + 2Z_2 = 3 + 5i$ ;  $Z_1 - 3Z_2 = -2 - 15i$  bo'lsa,  $Z_1 + Z_2$  ni toping.  
 A)  $1 - 3i$  B)  $1 - i$  C)  $1 + i$  D)  $2 - i$  E)  $2 + i$

320. 3 ga bo'lganda qoldiq 1, 4 ga bo'lganda qoldiq 2 qoladigan dastlabki 20 natural qiymatlari yig'indisini hisoblang.  
 A) 2480 B) 2500 C) 2220  
 D) 2460 E) 2440

321. Uchlari A(2;3) B(4;5) C(-7;8) va D(-9;6) nuqtalarda bo'lgan to'rtburchakning B uchidan AC diogonaling o'rtasigacha bo'lgan masofani toping.  
 A)  $\frac{\sqrt{170}}{2}$  B)  $\frac{\sqrt{106}}{2}$   
 C)  $\sqrt{2}$  D)  $\frac{\sqrt{130}}{2}$

322.  $S_2 = 4$ ;  $S_3 = 8$  bo'lsa, geometrik progressiyaning 1- hadini toping.

- A)  $6 - 2\sqrt{5}$  B)  $\frac{\sqrt{5}-1}{4}$  C) 1 D) 2

323. Quyida keltirilganlardan qaysi biri qorindosh sonlar?

- A) 6 va 28 B) 3 va 5  
C) 220 va 284 D) 429 va 201

324.  $P(x)$  ko'phad uchun

$$(x^2 + 2) \cdot P(x) + ax + b = x^7 + 2x^5 + 3x^4 + 3x^3 - 2x + 5$$

munosabat o'rinli bo'lsa,  $a+b$  ni hisoblang.

- A) 9 B) 12 C) 3 D) -23

325.  $y = \frac{\sin(ctgx+1)+\cos(tgx+1)}{2}$  funksiyaning qiymatlar sohasini toping.

- A)  $[-\sqrt{2}; -1) \cup (-1; 0) \cup (0; 1) \cup (1; \sqrt{2}]$   
B)  $[-\sqrt{2}; -1) \cup (-1; 1) \cup (1; \sqrt{2}]$   
C)  $[-\sqrt{2}; \sqrt{2}]$   
D)  $[-\sqrt{2}; 0) \cup (0; \sqrt{2}]$

326. 5 ta har xil ruchka va 4 ta har xil daftardan necha xil usul bilan ikkalasidan ham bittadan qatnashadigan qilib tanlab olish mumkin?

Javob:

327. Agar  $\vec{a}(1;5)$  va  $\vec{b}(2;7)$  bo'lsa,  $\vec{a}-\vec{b}$  ni toping.

- A)  $(-1; -2)$  B)  $(1;2)$   
C)  $(1; -2)$  D)  $(-1;2)$

328. Agar  $\vec{a}(5;4)$  va  $\vec{b}(4;3)$  bo'lsa,  $\vec{a}-\vec{b}$  ni toping.

Javob:

329.  $\vec{a}(-1;5;x)$  va  $\vec{b}(-1; -2; -5)$  vektorlar uchun  $\vec{a} \perp \vec{b}$  bo'lsa,  $x$  ni toping.

Javob:

330. Uchta yashikda 85,6 kg olma bor.

Ikkinchi yashik birinchisining 0,8 qismini, uchinchi yashikdagi olmalar ikkinchi yashikdagi olmalarning 42,5% ini tashkil qiladi. Birinchi yashikda qancha olma bor?

Javob:

331. Uch yashikda 64,2 kg meva bor. 2-yashikdagi meva birinchi yashikdagi mevaning 0,8 qismini tashkil qiladi. 3-yashikda esa 2-yashikdagining 42,5% miqdoricha meva bor. Birinchi yashikda qancha meva bor?

- A) 24 kg B) 28 kg  
C) 30 kg D) 36 kg

332. Arifmetik progressiyada  $9a_{11} = a_{19}$  bo'lsa, uning dastlabki 19 ta hadining yig'indisini toping.

Javob:

333. Arifmetik progressiyada  $a_{13} = 6a_8$  bo'lsa,  $S_{13}$  ni toping.

- A) 0 B) 4 C) 26 D) 13

334. Arifmetik progressiyada  $a_9 = 4a_6$  bo'lsa,  $S_9$  ni toping.

Javob:

335. Trapetsiyaning o'rta chizig'i 36 ga, asoslari ayirmasining moduli 10 ga teng teng bo'lsa, uning asoslarini toping.

Javob:

336.  $a^2 - b^2 + 2a + 6b - 8$  ifodani ko'paytuvchilarga ajrating.

Javob:

337.  $a^2 - b^2 + a + 7b - 12$  ifodani ko'paytuvchilaridan birini toping.

- A)  $a+b+3$  B)  $a+b+4$   
C)  $a-b+3$  C)  $a+b-3$

- 338.3 ga bo'lganda qoldiq 1, 4 ga bo'lganda qoldiq 2 qoladigan dastlabki 20 natural qiymatlari yig'indisini hisoblang.  
A) 2480 B) 2500 C) 2220  
D)2460 E)2440
339.  $x \neq 2$  bo'lganda  $x^2 + \frac{2}{x} = 5$  bo'lsa,  $x^2 + 2x + 7$  ifodaning qiymatini toping.  
A)1 B)6 C)8 D)10 E) 11
340. Aylana to'g'ri burchakli uchburchakning katta katetiga urinib, shu katet qarshisidagi burchak uchidan o'tadi, markazi esa gipotenuzada yotadi. Agar katetlarining uzunliklari 5 va 12 bo'lsa, tekislikning shu aylana bilan chegaralangan ichki sohasini yuzini toping.  
A)  $52\frac{13}{81}\pi$  B)  $53\frac{13}{81}\pi$   
C)  $52\frac{11}{81}\pi$  D)  $52\frac{17}{81}\pi$
341. Aylana to'g'ri burchakli uchburchakning katta katetiga urinib, shu katet qarshisidagi burchak uchidan o'tadi, markazi esa gipotenuzada yotadi. Agar katetlarining uzunliklari 6 va 8 bo'lsa, aylana radiusini toping.  
Javob:
342. Aylana to'g'ri burchakli uchburchakning katta katetiga urinib, shu katet qarshisidagi burchak uchidan o'tadi, markazi esa gipotenuzada yotadi. Agar katetlarining uzunliklari 6 va 8 bo'lsa, aylana uzunligini toping.  
Javob:
343. Aylana to'g'ri burchakli uchburchakning katta katetiga urinib, shu katet qarshisidagi burchak

uchidan o'tadi, markazi esa gipotenuzada yotadi. Agar katetlarining uzunliklari 6 va 8 bo'lsa, aylana diametrini toping.  
Javob:

344. Aylana to'g'ri burchakli uchburchakning katta katetiga urinib, shu katet qarshisidagi burchak uchidan o'tadi, markazi esa gipotenuzada yotadi. Agar katetlarining uzunliklari 3 va 4 bo'lsa, tekislikning shu aylana bilan chegaralangan ichki sohasini yuzini toping.  
Javob:
345. Aylana to'g'ri burchakli uchburchakning katta katetiga urinib, shu katet qarshisidagi burchak uchidan o'tadi, markazi esa gipotenuzada yotadi. Agar katetlarining uzunliklari 3 va 4 bo'lsa, tekislikning shu aylana radiusini toping.  
Javob:
346. Aylana to'g'ri burchakli uchburchakning katta katetiga urinib, shu katet qarshisidagi burchak uchidan o'tadi, markazi esa gipotenuzada yotadi. Agar katetlarining uzunliklari 3 va 4 bo'lsa, tekislikning shu aylana uzunligini toping.  
Javob:
347. Aylana to'g'ri burchakli uchburchakning katta katetiga urinib, shu katet qarshisidagi burchak uchidan o'tadi, markazi esa gipotenuzada yotadi. Agar katetlarining uzunliklari 3 va 4 bo'lsa, tekislikning shu aylana diametrini toping.  
Javob:

348. Aylana to'g'ri burchakli uchburchakning katta katetiga urinib, shu katet qarshisidagi burchak uchidan o'tadi, markazi esa gipotenuzada yotadi. Agar katetlarining uzunliklari 8 va 15 bo'lsa, aylana uzunligini toping.  
Javob:

349. Aylana to'g'ri burchakli uchburchakning katta katetiga urinib, shu katet qarshisidagi burchak uchidan o'tadi, markazi esa gipotenuzada yotadi. Agar katetlarining uzunliklari 8 va 15 bo'lsa, aylana radiusini toping.  
Javob:

350. Aylana to'g'ri burchakli uchburchakning katta katetiga urinib, shu katet qarshisidagi burchak uchidan o'tadi, markazi esa gipotenuzada yotadi. Agar katetlarining uzunliklari 8 va 15 bo'lsa, aylana diametrini toping.  
Javob:

351. 1,2,2,3,3,3,4,4,4,4,5,5,5,5,5,... ketma-ketlikning 2017-hadini toping.  
Javob:

352. 1,2,2,3,3,3,4,4,4,4,5,5,5,5,5,... ketma-ketlikning 2018-hadini toping.  
Javob:

353. 1,2,2,3,3,3,4,4,4,4,5,5,5,5,5,... ketma-ketlikning 1997-hadini toping.  
Javob:

354.  $\begin{cases} x^2 + y^2 = 4 \\ (x - 3)^2 + (y + 4)^2 = a \end{cases}$  aylanalar urinadigan barcha a larning yig'indisini toping.  
A)9 B)49 C)58 D)10 E)25

355. ABC uchburchakning AB;BC;AC tomonlari mos ravishta 4;6 va 8 ga teng va unga ichki chizilgan aylananing markazi I nuqta,I dan BC tomonga parallel kesma AC ni P nuqtada kesib o'tadi.IP kesmani toping.  
A)2,(6) B)2.4 C)3 D)1 E)2.5

356.  $(a^2 - b^2 - c^2 + 2bc) : \left(\frac{a+b-c}{a+b+c}\right)$  ifodaning  $a = 3; b = \sqrt{3}; c = -1$  bo'lgandagi qiymatini toping.  
A) 1 B) 2 C)3 D)4

357.  $(a^2 - b^2 - c^2 + 2bc) : \left(\frac{a+b-c}{a+b+c}\right)$  ifodaning  $a = 5; b = \sqrt{3}; c = -1$  bo'lgandagi qiymatini toping.  
Javob:

358.  $(a^2 - b^2 - c^2 + 2bc) : \left(\frac{a+b-c}{a+b+c}\right)$  ifodaning  $a = 7; b = \sqrt{3}; c = -1$  bo'lgandagi qiymatini toping.  
Javob:

359. Hech bir uchtasi bir to'g'ri chiziqda yotmaydigan 25 ta nuqtadan nechta uchburchak yasash mumkin?  
A) 2300 B)2304  
C)2200 D)2100

360. Hech bir uchtasi bir to'g'ri chiziqda yotmaydigan 15 ta nuqtadan nechta uchburchak yasash mumkin?  
Javob:

361. Hech bir uchtasi bir to'g'ri chiziqda yotmaydigan 35 ta nuqtadan nechta uchburchak yasash mumkin?  
Javob:

362.  $lg^2(100x) + lg^2(10x) + lg^2x = 14$  tenglamani yeching.  
A) 0,001 va 10 B) 10 va 0,01  
C) 100 va 0,0001 D) 0,1 va 1



363.  $lg^2(100x) + lg^2(10x) + lg^2x = 14$   
 tenglamaning ildizlari kopaytmasini toping.  
 Javob:

364.  $lg^2(1000x) + lg^2(10x) + lg^2x = 14$   
 tenglamani yeching.  
 Javob:

365.  $lg^2(100x) + lg^2(0.1x) + lg^2x = 14$   
 tenglamani ildizlarining yig'indisini toping.  
 Javob:

366. Hisoblang.  
 $log_2(cos100^\circ + cos20^\circ) - log_2 sin50^\circ$   
 A) -2 B) -1 C) 0 D) 1 E) 2

367.  $cos6^\circ \cdot cos42^\circ \cdot cos66^\circ \cdot cos78^\circ$  ni hisoblang.  
 A)  $\frac{\sqrt{3}}{16}$  B)  $\frac{1}{8}$  C)  $\frac{\sqrt{3}}{8}$  D)  $\frac{1}{16}$  E) 1

368.  $x, y \in Z$  va  $3x + 5y = 7$ , bo'lsa,  $x+4y$  quyidagilardan qaysi biriga teng bo'lishi mumkin?  
 A) 8 B) 15 C) 21 D) 25 E) 30

369.  $\left[\frac{2x-1}{3}\right] = x - 1$  tenglama nechta yechimga ega (bu yerda  $[a]$  - a ning butun qismi).  
 A) 2 B) 4 C) 3 D) 1 E) 5

370. M sonini 3 ga bo'lganda qoldiqda  $\frac{(3a+1)^{40}+1}{(3a+1)^{20}}$  qoladi. a ning eng kichik qiymati nechiga teng.  
 A) -0,(6) B) 1 C) -0,5 D) 0

371. Ifodani soddalashtiring:

$$\frac{x^3 + 27}{2x - 2} \cdot \frac{x^2 - 1}{x^2 + 4x + 3} \cdot \frac{6x + 12}{3x^2 - 9x + 27}$$

Javob:

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372.  $2x^2 - (2\sqrt{3} + 3\sqrt{2})x + \sqrt{6} + 2 = 0$   
 tenglamaning kichik ildizini toping.  
 A)  $\frac{\sqrt{2}}{2}$  B)  $\sqrt{3} - \sqrt{2}$   
 C)  $-\frac{\sqrt{2}}{2}$  D)  $\sqrt{3} + \sqrt{2}$

373.  $2x^2 - (2\sqrt{3} + 3\sqrt{2})x + \sqrt{6} + 2 = 0$   
 tenglamaning katta ildizini toping.  
 Javob:

374. Tenglamani yeching:  
 $4cos^2x - 2sin^2x - 5cosx - 4 = 0$   
 A)  $\pm arccos \frac{2}{3} + \pi n, n \in Z$   
 B)  $\pm arccos \left(-\frac{2}{3}\right) + 2\pi n, n \in Z$   
 C)  $arccos \left(-\frac{2}{3}\right) + \pi n, n \in Z$   
 D)  $\pm arccos \left(-\frac{2}{3}\right) + \pi n, n \in Z$

375. Funksiyaning aniqlanish sohasini toping:  
 $y = \sqrt{\log_{\frac{1}{3}}(x^2 - 2x) + 1}$   
 A)  $\{-1; 0\} \cup (2; 3]$   
 B)  $(-\infty; 0) \cup (2; \infty)$   
 C)  $(-\infty; -1] \cup [3; \infty)$  D)  $[-1; 3]$

376. Funksiyaning aniqlanish sohasini toping:  
 $y = \sqrt{\log_{\frac{1}{3}}(x^2 + 2x) + 1}$   
 Javob:

377. Funksiyaning aniqlanish sohasini toping:  
 $y = \sqrt{\log_{\frac{1}{3}}(x^2 - 2x) - 1}$   
 Javob:

378. Funksiyaning aniqlanish sohasini toping:  
 $y = \sqrt{\log_{\frac{1}{5}}(x^2 - 2x + 1) + 1}$   
 Javob: 0

379. O'lchamlari  $40 \times 20 \times 5$  sm bo'lgan to'g'ri burchakli parallelepiped shaklidagi mis g'o'lasidan qalinligi 1 mm bo'lgan tunuka taxtasi tayyorlandi. Bu tunuka taxtaning yuzini toping.

- A)  $0,4 \text{ m}^2$       B)  $40 \text{ m}^2$   
C)  $4 \text{ m}^2$       D)  $40 \text{ sm}^2$

380. O'lchamlari  $80 \times 40 \times 10$  sm bo'lgan to'g'ri burchakli parallelepiped shaklidagi mis g'o'lasidan qalinligi 1 mm bo'lgan tunuka taxtasi tayyorlandi. Bu tunuka taxtaning yuzini toping.

Javob:

381. Bir noma'lumli tenglama nechta ildizga ega bo'lishi mumkin?

- 1) bitta ildizga;  
2) cheksiz ko'p ildizga;  
3) ildizi yo'q.  
A) 1;2;3      B) faqat 2 va 3  
C) faqat 1      D) faqat 1 va 3

382. Quyidagi tasdiqlarning qaysilari to'g'ri?

- 1) Kub - barcha yoqlari kvadratlardan iborat ko'pyoqdir;  
2) Parallelepiped - barcha yoqlari parallelogramdan iborat ko'pyoqdir;  
3) Prizma - asoslari deb atalgan ikki yog'i parallel tekisliklarda yotuvchi, qolgan yoqlari trapetsiyadan iborat ko'pyoqdir.  
A) 1;3    B) 1;2    C) 1;2;3    D) 2;3

383.  $S_2 = 4$ ;  $S_3 = 8$  bo'lsa, geometrik progressiyaning 1- hadini toping.

- A)  $6 - 2\sqrt{5}$     B)  $\frac{\sqrt{5}-1}{4}$     C) 1    D) 2

384.  $|\lg|x|| = x - 1$  tenglama nechta yechimga ega.

- A) 2    B) 3    C) 1    D) 4

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385.  $\sqrt{8 + 2\sqrt{3-x+1} - 4\sqrt{3-x}} + 2\sqrt{3-x+1} > 5$  tengsizlikni qanoatlantiruvchi eng kichik va eng katta butun sonlar ayirmasining absolyut qimatini toping.

- A) 3    B) 4    C) 2    D) 0

386.  $\sqrt{8 + 2\sqrt{3-x+1} - 4\sqrt{3-x}} + 2\sqrt{3-x+1} > 5$  tengsizlikni qanoatlantiruvchi eng kichik va eng katta butun sonlar ko'paytmasining absolyut qimatini toping.

Javob:

387. Radiusi 3 ga teng bo'lgan aylanaga ikkita AB va AC urinmalar o'tkazilgan bo'lib, bunda A nuqta aylana markazidan 4 ga teng masofada joylashgan. Berilgan aylanaga, AB va AC urinmalarga urinuvchi aylana(hosil bo'lgan yangi aylananing radiusi berilgan aylananing radiusidan kata)ning radiusini toping.

- A) 21    B) 36    C) 55    D) 78

388. Radiusi 3 ga teng bo'lgan aylanaga ikkita AB va AC urinmalar o'tkazilgan bo'lib, bunda A nuqta aylana markazidan 4 ga teng masofada joylashgan. Berilgan aylanaga, AB va AC urinmalarga urinuvchi aylana(hosil bo'lgan yangi aylananing radiusi berilgan aylananing radiusidan kata)ning diametrini toping.

- A) 42    B) 72    C) 110    D) 156

389. Radiusi 3 ga teng bo'lgan aylanaga ikkita AB va AC urinmalar o'tkazilgan bo'lib, bunda A nuqta aylana markazidan 4 ga teng masofada joylashgan. Berilgan aylanaga, AB va AC urinmalarga urinuvchi aylana(hosil bo'lgan yangi aylananing radiusi berilgan aylananing radiusidan kata)ning uzunligini toping.

- A)  $42\pi$     B)  $72\pi$     C)  $110\pi$     D)  $156\pi$

390. Uchburchakli piramidaning yon qirralari bir xil uzunlikka ega bo'lib, bu uzunlik 6 ga teng. Bu piramidaning uchidagi tekis burchaklaridan ikkitasi  $45^\circ$ , uchinchi  $60^\circ$  ga teng bo'lsa, piramidaning hajmini toping.  
 A) 14,(6)                      B) 15  
 C) 17,(6)                      D) 18

391. ABC uchburchakning tomonlarining uzunliklari  $AB=5$ ,  $BC=4$ ,  $AC=6$  bo'lsa,  $\vec{CA} \cdot \vec{CB}$  skalyar ko'paytmani hisoblang.  
 A) -2,5                      B) 0,5  
 C) 2,5                      D) 1,25

392. ABC uchburchakning tomonlarining uzunliklari  $AB=5$ ,  $BC=4$ ,  $AC=6$  bo'lsa,  $\vec{AB} \cdot \vec{AC}$  skalyar ko'paytmani hisoblang.  
 Javob:

393. ABC uchburchakning tomonlarining uzunliklari  $AB=5$ ,  $BC=4$ ,  $AC=6$  bo'lsa,  $\vec{BA} \cdot \vec{BC}$  skalyar ko'paytmani hisoblang.  
 Javob:

394. Tengsizlikni yeching.  $2^x < \sqrt{x}$   
 A)  $\emptyset$                       B)  $[0,1]$   
 C)  $\{0;1\}$                       D)  $[0; +\infty)$

395.  $\sqrt{3-x} > x - 1$  tengsizlikni yeching.  
 A)  $(-\infty;2)$                       B)  $(0;3]$   
 C)  $(2;3]$                       D)  $(1;3]$

396. Teng yonli ABCD trapetsiyada AC diogonal CD tomonga perpendikulyar. Agar  $AD = 4$ ,  $|AB|^2 + |BC|^2 = 11$  bo'lsa,  $|AB|$  ni toping.  
 A) 3                      B)  $\sqrt{2}$   
 C) 2                      D) 1,5

397.  $\begin{cases} x + y + x^2 + y^2 = 8 \\ x^2y + y^2x = 6 \end{cases}$  sistemani yeching.  
 A)  $(1; -3); (-3;1); (1;2); (2;1)$   
 B)  $(-1; -3); (3;-1); (1;2); (2;1)$   
 C)  $(1; -3); (-3;1); (-1;2); (2;-1)$   
 D)  $(1; -3); (-3;1); (1;-2); (-2;1)$

398.  $\begin{cases} x + y + x^2 + y^2 = 8 \\ x^2y + y^2x = 6 \end{cases}$  sistemani qanoatlantiruvchi barcha x va y larning yig'indisini hisoblang.  
 Javob:

399.  $\begin{cases} x + y + x^2 + y^2 = 8 \\ x^2y + y^2x = 6 \end{cases}$  sistemani qanoatlantiruvchi barcha x va y larning ko'paytmasini hisoblang.  
 A) 36    B) 48    C) 12    D) 10

400.  $\frac{(8-x)^2}{3-x} \leq 0$  tengsizlikning  $[-1;9]$  kesmadagi butun yechimlari yig'indisini hisoblang.  
 Javob:

401.  $\frac{(8-x)^2}{3-x} \leq 0$  tengsizlikning  $[-1;9]$  kesmadagi butun yechimlari nechta?  
 Javob:

402.  $\frac{(8-x)^2}{3-x} \leq 0$  tengsizlikning  $[-1;9]$  kesmadagi eng katta va eng kichik butun yechimlari yig'indisini hisoblang.  
 Javob:

403.  $a$  va  $b$  6 ga bo'linmaydigan juft sonlar.  $a$  va  $b$  ni 6 ga bo'lganda bir xil qoldiq qoladi.  $a+b$  ni 6 ga bo'lgandagi qoldini toping.  
 Javob:

404.  $3a+2b+2c=0$  bo'lsa,  
 $\frac{a}{b+c} + \frac{b}{3a+2c} + \frac{c}{3a+2b} = ?$   
 Javob:

405.  $\int (\ln x^{\ln x^{\ln x^{\ln x}}} \cdot \frac{1}{x} + e^x \cos x) dx$   
integralni hisoblang.

- A)  $\frac{\ln^5 x}{5} - \frac{e^x}{2} \cdot (\cos x + \sin x) + C$
- B)  $\frac{\ln^5 x}{5} + \frac{e^x}{2} \cdot (\cos x - \sin x) + C$
- C)  $\frac{\ln^5 x}{10} - \frac{e^x}{2} \cdot (\cos x + \sin x) + C$
- D)  $\frac{\ln^5 x}{5} + \frac{e^x}{2} \cdot (\cos x + \sin x) + C$

406. Radiusi 10 ga teng bo'lgan yarim sharga konus shunday tashqi chizilganki, konus asosining markazi bilan yarimsharning markazi ustma-ust tushadi. Konusning balandligi qanday bo'lganda uning hajmi eng katta bo'ladi?

- A) 10    B) 15    C)  $10\sqrt{3}$     D)  $10\sqrt{2}$

407.  $y = \ln x^{\ln x^{\dots \ln x}}$  (bu yerda 2018 ta  $\ln x$  bor) funksiyaning 2-tartibli hosilasini toping.

- A)  $\frac{2018 \cdot 2017 \cdot \ln^{2016} x - 2018 \cdot \ln^{2017} x}{x^2}$
- B)  $\frac{2018 \cdot 2017 \cdot \ln^{2016} x - 2018 \cdot \ln^{2017} x}{2016x^2}$
- C)  $\frac{2018 \cdot 2017 \cdot x \ln^{2016} x + 2018 \cdot 2016 \cdot \ln^{2017} x}{2016x^2}$
- D)  $\frac{2018 \cdot 2017 \cdot x \ln^{2016} x - 2018 \cdot 2016 \cdot \ln^{2017} x}{x^2}$

408.  $a = \sqrt[3]{4} + \sqrt[3]{2} + 1$  bo'lsa,  $\frac{3}{a} + \frac{3}{a^2} + \frac{3}{a^3}$  ni hisoblang.

Javob:

409.  $a = \sqrt[3]{9} + \sqrt[3]{3} + 1$  bo'lsa,  $\frac{3}{a} + \frac{3}{a^2} + \frac{3}{a^3}$  ni hisoblang.

Javob:

410. Agar  $|a| \neq |b| \neq |c|$  va  $\frac{a^2}{a+b} + \frac{b^2}{b+c} + \frac{c^2}{a+c}$  bo'lsa,  $\frac{b^2}{a+b} + \frac{c^2}{b+c} + \frac{a^2}{a+c}$  ni qiymatini hisoblang.

- A) 8                      B) 6
- C) 7                      D) 9

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411. Ikkita son o'rta proporsionali shu sonlardan kichigidan 6 ga ko'p, o'rta arifmetigi esa kattasidan 7 ga kam bo'lsa, kichik sonni toping.

- A) 18    B) 20    C) 24    D) 30

412. Ikkita son o'rta proporsionali shu sonlardan kichigidan 6 ga ko'p, o'rta arifmetigi esa kattasidan 7 ga kam bo'lsa, katta sonni toping.

- A) 32    D) 30    C) 36    D) 42

413. Ikkita son o'rta proporsionali shu sonlardan kichigidan 6 ga ko'p, o'rta arifmetigi esa kattasidan 7 ga kam bo'lsa, shu sonlarni toping.

- A) 18 va 32              B) 18 va 30
- C) 20 va 32              D) 20 va 34

414. Uchburchakli piramidaning asosining tomonlari 6, 6 va 8 ga teng. Asosidagi barcha ikki yoqli burchaklari  $45^\circ$  ga teng bo'lsa, piramidaning hajmini toping.

- A)  $\frac{32}{3}$     B) 10    C)  $\frac{34}{3}$     D) 11

415. Uchburchakli piramidaning asosining tomonlari 6, 6 va 8 ga teng. Asosidagi barcha ikki yoqli burchaklari  $45^\circ$  ga teng bo'lsa, piramidaning balandligini toping.

Javob:

416. Uchburchakli piramidaning asosining tomonlari 6, 6 va 8 ga teng. Asosidagi barcha ikki yoqli burchaklari  $45^\circ$  ga teng bo'lsa, piramidaning yon sirtini yuzini toping.

Javob:

417. Arifmetik progressiyaning dastlabki 5 ta hadi yig'indisi 100 ga teng bo'lib, barcha hadlari natural sonlardan iborat. Bu progressiyaning eng katta hadi nechaga teng bo'lishi mumkin?

Javob:

418. Arifmetik progressiyaning dastlabki 5 ta hadi yig'indisi 100 ga teng bo'lib, barcha hadlari natural sonlardan iborat. Bu progressiyaning eng kichik hadi nechaga teng bo'lishi mumkin?  
Javob:

419. Arifmetik progressiyaning dastlabki 5 ta hadi yig'indisi 100 ga teng bo'lib, barcha hadlari natural sonlardan iborat. Bu progressiyaning o'rta hadi nechaga teng bo'lishi mumkin?  
Javob:

420. Muntazam uchburchakka tomoni uzunligi 1 ga teng bo'lgan kvadrat ichki chizilgan. Uchburchakning yuzini toping.  
Javob:

421. Muntazam uchburchakka tomoni uzunligi 1 ga teng bo'lgan kvadrat ichki chizilgan. Uchburchakning perimetrini toping.  
Javob:

422. Muntazam uchburchakka tomoni uzunligi 1 ga teng bo'lgan kvadrat ichki chizilgan. Uchburchakning balandligini toping.  
Javob:

423.  $(2; -3)$  nuqtani Ox o'qiga nisbatan simmetrik bo'lgan nuqtasini toping.  
Javob:

424.  $(2; -3)$  nuqtani Oy o'qiga nisbatan simmetrik bo'lgan nuqtasini toping.  
Javob:

425.  $(2; -3)$  nuqtani koordinata boshiga nisbatan simmetrik bo'lgan nuqtasini toping.  
Javob:

426.  $y = 3 \cdot \sqrt{tgx - 1}$  funksiyaning qiymatlar to'plamini toping.  
A)  $[0; \infty)$  B)  $[3; \infty)$   
C)  $[-1; \infty)$  D)  $[-3; \infty)$

427.  $y = 3 \cdot \sqrt{tgx + 1}$  funksiyaning qiymatlar to'plamini toping.  
A)  $[0; \infty)$  B)  $[3; \infty)$   
C)  $[-1; \infty)$  D)  $[-3; \infty)$

428.  $y = 7 \cdot \sqrt{tgx - 1}$  funksiyaning qiymatlar to'plamini toping.  
A)  $[0; \infty)$  B)  $[3; \infty)$   
C)  $[-1; \infty)$  D)  $[-3; \infty)$

429.  $2^{\sqrt{x-3}+1} - 6 \geq 2^{\sqrt{x-3}-3}$  tengsizlikni yeching.  
Javob:

430.  $2^{\sqrt{x-3}+1} - 6 \leq 2^{\sqrt{x-3}-3}$  tengsizlikni yeching.  
Javob:

431. A shahardan B shaharga 6 xil usulda borish mumkin, B shahardan C shaharga esa 4 xil usul bilan borish mumkin. Agar A dan D ga 2 xil usul bilan, D dan B ga ham 2 xil usul bilan borish mumkin bo'lsa, A dan C ga necha xil usul bilan borish mumkin?  
A) 40 B) 36  
C) 44 D) 56

432. Soddalashtiring:  
$$\frac{tg2\alpha + 1 + ctg\left(2\alpha + \frac{3\pi}{2}\right) \cdot tg\left(\frac{3\pi}{2} + \alpha\right)}{ctg\alpha + tg\alpha}$$
  
Javob:

433. 5 ta har xil ruchka va 4 ta daftardan nech xil usul bilan ikkalasidan ham tanlab olish mumkin?  
Javob:



434.  $4^3 + 8^3 + \dots + 100^3 = ?$

- A) 7670000    B) 6750000
- C) 6760000    D) 6780000

435.  $a = \log_{108} 2$  bo'lsa,  $\log_{108} 3$  ni toping.

- A)  $\frac{1-2a}{3}$                       B)  $\frac{1-3a}{3}$
- C)  $\frac{1-2a}{4}$                       D)  $\frac{1+2a}{3}$

436.  $\sin x + \cos x = 1,04$  x ning qiymati qaysi chorakda joylashgan?

- A) I                      B) I, II
- C) I,IV                D) yechimga ega emas

437.  $\sin x + \cos x = -1,04$  x ning qiymati qaysi chorakda joylashgan?

- A) III                      B) I, II
- C) I,IV                    D) yechimga ega emas

438.  $\sin x + \cos x = 0,94$  x ning qiymati qaysi chorakda joylashgan?

- A) II, IV                B) I, II
- C) I,IV                    D) yechimga ega emas

439.  $\sin x + \cos x = -0,94$  x ning qiymati qaysi chorakda joylashgan?

- A) II, IV                B) I, II
- C) I,IV                    D) yechimga ega emas

440. Quyidagi berilgan tenglama ildizlari yig'indisini toping.

$(x - 3)^6 + (x^2 - 2x - 1)^3 = 0$   
A) 2    B) 3    C) 1    D) 4

441. Quyidagi berilgan tenglama ildizlari yig'indisini toping.

$(x - 3)^6 + (x^2 - 2x + 1)^3 = 0$   
Javob:

442.  $y = 2x^5 - \ln x$  funksiyaga  $x_0=1$  nuqtada o'tkazilgan urinma tenglamasini tuzing.

- A)  $f(x) = 11 - 9x$
- B)  $f(x) = 9x + 11$
- C)  $f(x) = 9x - 8$
- D)  $f(x) = -11 - 9x$

443.  $y = 2x^5 - \ln x$  funksiyaga  $x_0=2$  nuqtada o'tkazilgan urinma tenglamasini tuzing.  
Javob:

444. 7,11,15... 411 va 13,19,25...265 arifmetik progressiyalar berilgan. Bu progressiyalar umumiy hadlarining eng kattasi va eng kichikining ayirmasini toping.  
A) 228    B) 220    C) 248    D) 231

445. 7,11,15... 411 va 13,19,25...265 arifmetik progressiyalar berilgan. Bu progressiyalar umumiy hadlarining eng kattasi va eng kichikining yig'indisini toping.  
Javob:

446. Asoslari a va b, diogonallari m,n bo'lgan trapetsiya uchun  $m^2 + n^2 = (a + b)^2$  bo'lsa, trapetsiyaning diogonallari orasidagi burchakni toping.  
A)  $60^\circ$     B)  $45^\circ$     C)  $30^\circ$     D)  $90^\circ$

447.  $y = \cos \frac{2x-11}{5}$  berilgan funksiyaning eng kichik musbat davrini toping.  
A)  $5\pi$     B)  $2\pi$     C)  $3\pi$     D)  $4\pi$

448.  $y = 97 \cos \frac{2x+11}{5} + 2018$  berilgan funksiyaning eng kichik musbat davrini toping.  
A)  $5\pi$     B)  $2\pi$     C)  $3\pi$     D)  $4\pi$

449.  $(x^2 + 3x + 1) \cdot (x^2 + 3x + 3) < 35$  Tengsizlikning eng katta va eng kichik yechimlarining ayirmasini toping.  
A) 5    B) 3    C) 4    D) 6

450.  $(x^2 + 3x + 1) \cdot (x^2 + 3x + 3) < 35$  Tengsizlikning eng katta yechimini toping.  
Javob:

451.  $(x^2 + 3x + 1) \cdot (x^2 + 3x + 3) < 35$   
 tengsizlikning eng kichik yechimini  
 toping.  
 Javob:

452. ABC uchburchakning BM medianasi  
 va BC tomoniga parallel bo'lgan PN  
 kesma O nuqtada kesishadi.  $S_{BON} = S_{POM}$   
 hamda  $S_{ABC} = 18 \text{ sm}^2$  bo'lsa, APN  
 uchburchakning yuzini toping.  
 A)15 B)9 C)16 D)10

453. Silindrning balandlig h va asosining  
 radiusi r. Silindrga tashqi chizilgan  
 shar sirtining yuzini toping.  
 A)  $\pi(4r^2 - h^2)$  B)  $\pi(r^2 + h^2)$   
 C)  $\pi(4r^2 + h^2)$  D)  $\pi(2r^2 + h^2)$

454. Hisoblang:  $\frac{1}{\cos 200^\circ} + 4 \sin 50^\circ$   
 A) 1 B)  $\frac{\sqrt{3}}{2}$  C)  $\sqrt{3}$  D) 2

455. To'g'ri burchakli uchburcha katetlari  
 a va b ga teng, hamda o'tkir  
 burchaklaridan biri x ga teng bo'lsa  
 tgx ni toping.  
 Javob:

456. To'g'ri burchakli uchburcha katetlari  
 a va b ga teng, hamda o'tkir  
 burchaklaridan biri x ga teng bo'lsa  
 ctgx ni toping.  
 Javob:

457. To'g'ri burchakli uchburcha katetlari  
 a va b ga teng, hamda o'tkir  
 burchaklaridan biri x ga teng bo'lsa  
 sinx ni toping.  
 Javob:

458. To'g'ri burchakli uchburcha katetlari  
 a va b ga teng, hamda o'tkir  
 burchaklaridan biri x ga teng bo'lsa  
 cosx ni toping.  
 Javob:

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459.  $\sqrt{21 - \sqrt{21 + x}} = x$  tenglama nechta  
 natural yechimga ega?  
 Javob:

460.  $\sqrt{21 - \sqrt{21 + x}} = x$  tenglama  
 yeching.  
 Javob:

461.  $f(x) = e^x - x - 1$  funksiyaning  
 o'sish oralig'ini toping.  
 A)  $[0; \infty)$  B)  $[1; \infty)$   
 C)  $[-2; 5]$  D)  $(-\infty; 1)$

@matematikafly

462.  $f(x) = e^x - x - 1$  funksiyaning  
 kamayish oralig'ini toping.  
 Javob:

463.  $f(x) = e^x - x - 1$  funksiyaning eng  
 katta qiymatini toping.  
 Javob:

464.  $f(x) = e^x - x - 1$  funksiyaning eng  
 kichik qiymatini toping.  
 Javob:

465. Geometrik progressiyada  
 $b_5 - b_1 = 18$  va  $b_3 - b_1 = 12$  bo'lsa,  
 $b_{11}$  ni toping.  
 A) -0,75 B) 0,5  
 C) 1,5 D) -0,5

466. Geometrik progressiyada  
 $b_5 - b_1 = 18$  va  $b_3 - b_1 = 12$  bo'lsa,  
 $b_1$  ni toping.  
 Javob:

467.  $f(x) = \left(\frac{1}{3}\right)^{x^2 - 6x + 11}$  funksiyaning  
 qiymatlar sohasining toping.  
 A)  $[0; \infty)$  B)  $\left(0; \frac{1}{9}\right]$   
 C)  $\left(\frac{1}{3}; \infty\right)$  D)  $(3; \infty)$

@matematikafly

468. Uchburchakli muntazam piramidaga tashqi chizilgan sharning markazi uning balandligini uchidan 6 va 3 ga teng bo'lgan qismlarga ajratdi. Piramidaning hajmini toping.

- A)  $\frac{729\sqrt{3}}{4}$       B)  $\frac{81\sqrt{3}}{4}$   
 C)  $\frac{25\sqrt{3}}{4}$       D)  $\frac{243\sqrt{3}}{4}$

469. Soddalashtiring.

$$\frac{a^3(c-b) + b^3(a-c) + c^3(b-a)}{a^2(c-b) + b^2(a-c) + c^2(b-a)}$$

- A) a-b+c      B) 2a-b-c  
 C) a+b-c      D) a+b+c

470. A(3,01;-2,03) nuqtalardan o'tuvchi va m(-10;20) vektorga perpendekulyar bo'lgan to'g'ri chiziq tenglamasini tuzing.

- A) 10y+5x+35,35=0  
 B) 10y-5x+35,35=0  
 C) 10y+5x-35,35=0  
 D) 10y-5x-35,35=0

471.  $a = \frac{1}{6}(\log_2^3 3 - \log_2^3 6 - \log_2^3 12 + \log_2^3 24)$  bo'lsa,  $2^a$  ni toping.

- A) 72      B) 75  
 C) 80      D) 60

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472.  $a = \frac{1}{6}(\log_2^3 3 - \log_2^3 6 - \log_2^3 12 + \log_2^3 24)$  bo'lsa,  $4^a$  ni toping.

Javob:

473.  $\frac{x^2}{4} + \frac{9}{x^2} - 2\left(\frac{x}{2} - \frac{3}{x}\right) - \frac{9}{4} \leq 0$

tengsizlikni butun yechilari nechta?

- A) 3 ta      B) 2 ta  
 C) 1 ta      D) yechimga ega emas

474.  $\frac{x^2}{4} + \frac{9}{x^2} - 2\left(\frac{x}{2} - \frac{3}{x}\right) - \frac{9}{4} \leq 0$

tengsizlikning eng katta butun yechimini toping.

Javob:

@matematikafly

475. ABC uchburchakning tomonlari uzunliklari AB=5, BC=4 va CA=4 bo'lsa,  $\vec{CA} \cdot \vec{CB}$  skalyar ko'paytmani hisoblang.  
 Javob:

476. ABC uchburchakning tomonlari uzunliklari AB=5, BC=4 va CA=4 bo'lsa,  $\vec{AB} \cdot \vec{AC}$  skalyar ko'paytmani hisoblang.  
 Javob:

477. ABC uchburchakning tomonlari uzunliklari AB=5, BC=4 va CA=4 bo'lsa,  $\vec{BA} \cdot \vec{BC}$  skalyar ko'paytmani hisoblang.  
 Javob:

478.  $y = \ln(x^2 - 2x - 3)$  funksiyaning manfiy qiymatlar qabul qiladigan butun x lar sonini toping.  
 Javob:

479. ABC uchburchakning BC tomonida D nuqta olingan. Agar BD=16, DC=4 va AB=AD=10 bo'lsa, ADC uchburchakning yuzini toping.  
 A) 12      B) 14      C) 10      D) 16

480. ABC uchburchakning BC tomonida D nuqta olingan. Agar BD=12, DC=4 va AB=AD=10 bo'lsa, ADC uchburchakning yuzini toping.  
 A) 16      B) 14      C) 10      D) 12

481. ABC uchburchakning BC tomonida D nuqta olingan. Agar BD=6, DC=4 va AB=AD=5 bo'lsa, ADC uchburchakning yuzini toping.  
 A) 8      B) 14      C) 10      D) 16

482. ABC uchburchakning BC tomonida D nuqta olingan. Agar BD=8, DC=4 va AB=AD=5 bo'lsa, ADC uchburchakning yuzini toping.  
 A) 6      B) 14      C) 10      D) 16

483. ABC uchburchakning BC tomonida D nuqta olingan. Agar  $BD=16$ ,  $DC=4$  va  $AB=AD=17$  bo'lsa, ADC uchburchakning yuzini toping.  
A)30 B)28 C)20 D)32

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484. ABC uchburchakning BC tomonida D nuqta olingan. Agar  $BD=30$ ,  $DC=4$  va  $AB=AD=17$  bo'lsa, ADC uchburchakning yuzini toping.  
A)16 B)28 C)20 D)32

485. ABC uchburchakning BC tomonida D nuqta olingan. Agar  $BD=10$ ,  $DC=4$  va  $AB=AD=13$  bo'lsa, ADC uchburchakning yuzini toping.  
A)24 B)28 C)20 D)32

486. ABC uchburchakning BC tomonida D nuqta olingan. Agar  $BD=24$ ,  $DC=4$  va  $AB=AD=13$  bo'lsa, ADC uchburchakning yuzini toping.  
A)10 B)14 C)20 D)16

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487. ABC uchburchakning BC tomonida D nuqta olingan. Agar  $BD=15$ ,  $DC=4$  va  $AB=AD=12,5$  bo'lsa, ADC uchburchakning yuzini toping.  
A)20 B)28 C)20 D)32

488. ABC uchburchakning BC tomonida D nuqta olingan. Agar  $BD=20$ ,  $DC=4$  va  $AB=AD=10$  bo'lsa, ADC uchburchakning yuzini toping.  
A)15 B)28 C)20 D)32

489.  $A(0;1)$  va  $B(5;-3)$  nuqtalar berilgan. Agar B nuqta AC kesmaning o'rtasi bo'lsa, C nuqta koordinatalar yig'indisini toping.  
A)3 B)2,5 C)2 D)4

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490.  $A(4;-1)$  va  $B(2;-5)$  nuqtalar berilgan. Agar B nuqta AC kesmaning o'rtasi bo'lsa, C nuqta koordinatalar yig'indisini toping.  
A)-9 B)-5 C)12 D)-4

491.  $A(-3;2)$  va  $B(2;0)$  nuqtalar berilgan. Agar B nuqta AC kesmaning o'rtasi bo'lsa, C nuqta koordinatalar yig'indisini toping.  
A)-9 B)-5 C)12 D)-4

492.  $A(3;-2)$  va  $B(0;-2)$  nuqtalar berilgan. Agar B nuqta AC kesmaning o'rtasi bo'lsa, C nuqta koordinatalar yig'indisini toping.  
A)-5 B)-9 C)12 D)-4

493.  $A(-8;-3)$  va  $B(-2;3)$  nuqtalar berilgan. Agar B nuqta AC kesmaning o'rtasi bo'lsa, C nuqta koordinatalar yig'indisini toping.  
A)13 B)-5 C)-9 D)-4

494. ABCD trapetsiyaning yuzi 48 ga teng, asoslari  $DC=6$ ,  $AB=2$ . BC tomonidan E nuqta olingan bo'lib,  $BE=2EC$  bo'lsa, ADE uchbutchakning yuzini toping.  
A)28 B)18 C)24 D)32

495. ABCD trapetsiyaning yuzi 24 ga teng, asoslari  $DC=6$ ,  $AB=2$ . BC tomonidan E nuqta olingan bo'lib,  $BE=2EC$  bo'lsa, ADE uchbutchakning yuzini toping.  
A)14 B)21 C)12 D)16

496. ABCD trapetsiyaning yuzi 36 ga teng, asoslari  $DC=6$ ,  $AB=2$ . BC tomonidan E nuqta olingan bo'lib,  $BE=2EC$  bo'lsa, ADE uchbutchakning yuzini toping.  
A)21 B)14 C)12 D)16

497. ABCD trapetsiyaning yuzi 12 ga teng, asoslari  $DC=6$ ,  $AB=2$ . BC tomonidan E nuqta olingan bo'lib,  $BE=2EC$  bo'lsa, ADE uchbutchakning yuzini toping.  
A)7 B)21 C)12 D)16

498. ABCD trapetsiyaning yuzi 60 ga teng, asoslari  $DC=6$ ,  $AB=2$ . BC tomonidan E nuqta olingan bo'lib,  $BE=2EC$  bo'lsa, ADE uchburchakning yuzini toping.  
A)35 B)21 C)12 D)16

499. Muntazam ko'pburchakning tomoni unga tashqi chizilgan aylananing  $36^\circ$  li yoyini tortib turadi. Muntazam ko'pburchakning tomonlari sonini toping.  
A)10 B)12 C)6 D)8

500. Muntazam ko'pburchakning tomoni unga tashqi chizilgan aylananing  $30^\circ$  li yoyini tortib turadi. Muntazam ko'pburchakning tomonlari sonini toping.  
A)12 B)10 C)6 D)8

501. Muntazam ko'pburchakning tomoni unga tashqi chizilgan aylananing  $72^\circ$  li yoyini tortib turadi. Muntazam ko'pburchakning tomonlari sonini toping.  
A)5 B)12 C)6 D)8

502. Muntazam ko'pburchakning tomoni unga tashqi chizilgan aylananing  $60^\circ$  li yoyini tortib turadi. Muntazam ko'pburchakning tomonlari sonini toping.  
A)6 B)12 C)16 D)18

503. Muntazam ko'pburchakning tomoni unga tashqi chizilgan aylananing  $18^\circ$  li yoyini tortib turadi. Muntazam ko'pburchakning tomonlari sonini toping.  
A)20 B)12 C)10 D)8

504. Muntazam ko'pburchakning tomoni unga tashqi chizilgan aylananing  $10^\circ$  li yoyini tortib turadi. Muntazam ko'pburchakning tomonlari sonini toping.  
A)36 B)24 C)26 D)28

505. Markaziy burchagi  $72^\circ$  bo'lgan sektorning yuzi 15 ga teng. Sektor radiusini toping.

A)  $\sqrt{\frac{75}{\pi}}$  B)  $\sqrt{\frac{45}{\pi}}$  C)  $\sqrt{\frac{15}{\pi}}$  D)  $\sqrt{\frac{25}{\pi}}$

506. Markaziy burchagi  $36^\circ$  bo'lgan sektorning yuzi 15 ga teng. Sektor radiusini toping.

A)  $\sqrt{\frac{150}{\pi}}$  B)  $\sqrt{\frac{45}{\pi}}$  C)  $\sqrt{\frac{15}{\pi}}$  D)  $\sqrt{\frac{25}{\pi}}$

507. Markaziy burchagi  $120^\circ$  bo'lgan sektorning yuzi 15 ga teng. Sektor radiusini toping.

A)  $\sqrt{\frac{45}{\pi}}$  B)  $\sqrt{\frac{75}{\pi}}$  C)  $\sqrt{\frac{15}{\pi}}$  D)  $\sqrt{\frac{25}{\pi}}$

508. Markaziy burchagi  $60^\circ$  bo'lgan sektorning yuzi 15 ga teng. Sektor radiusini toping.

A)  $\sqrt{\frac{90}{\pi}}$  B)  $\sqrt{\frac{45}{\pi}}$  C)  $\sqrt{\frac{60}{\pi}}$  D)  $\sqrt{\frac{25}{\pi}}$

509. Markaziy burchagi  $90^\circ$  bo'lgan sektorning yuzi 15 ga teng. Sektor radiusini toping.

A)  $\sqrt{\frac{60}{\pi}}$  B)  $\sqrt{\frac{75}{\pi}}$  C)  $\sqrt{\frac{90}{\pi}}$  D)  $\sqrt{\frac{48}{\pi}}$

510. To'g'ri burchakli uchburchakka ichki va tashqi chizilgan aylana radiuslari uzunliklari yig'indisi 4 ga, gipotenuzasi esa 6 ga teng. Uchburchakning perimetrini toping.

A)14 B)12  
C)18 D)20

511. To'g'ri burchakli uchburchakka ichki va tashqi chizilgan aylana radiuslari uzunliklari yig'indisi 5 ga, gipotenuzasi esa 8 ga teng. Uchburchakning perimetrini toping.

A)18 B)12  
C)20 D)14



512. To'g'ri burchakli uchburchakka ichki va tashqi chizilgan aylana radiuslari uzunliklari yig'indisi 7 ga, gipotenuzasi esa 10 ga teng. Uchburchakning perimetrini toping.  
A)24 B)12 C)14 D)20

513. To'g'ri burchakli uchburchakka ichki va tashqi chizilgan aylana radiuslari uzunliklari yig'indisi 3,5 ga, gipotenuzasi esa 5 ga teng. Uchburchakning perimetrini toping.  
A)12 B)14 C)18 D)20

514. To'g'ri burchakli uchburchakka ichki va tashqi chizilgan aylana radiuslari uzunliklari yig'indisi 17 ga, gipotenuzasi esa 26 ga teng. Uchburchakning perimetrini toping.  
A)60 B)72 C)58 D)50

515. ABCD to'rtburchak aylanaga ichki chizilgan. Agar  $\angle ABC = 105^\circ$ ,  $\angle CAD = 35^\circ$  bo'lsa,  $\angle ABD$  ni toping.  
A)  $70^\circ$  B)  $60^\circ$  C)  $75^\circ$  D)  $80^\circ$

516. ABCD to'rtburchak aylanaga ichki chizilgan. Agar  $\angle ABC = 105^\circ$ ,  $\angle CAD = 45^\circ$  bo'lsa,  $\angle ABD$  ni toping.  
A)  $60^\circ$  B)  $70^\circ$  C)  $75^\circ$  D)  $80^\circ$

517. ABCD to'rtburchak aylanaga ichki chizilgan. Agar  $\angle ABC = 105^\circ$ ,  $\angle CAD = 30^\circ$  bo'lsa,  $\angle ABD$  ni toping.  
A)  $75^\circ$  B)  $60^\circ$  C)  $70^\circ$  D)  $80^\circ$

518. ABCD to'rtburchak aylanaga ichki chizilgan. Agar  $\angle ABC = 105^\circ$ ,  $\angle CAD = 25^\circ$  bo'lsa,  $\angle ABD$  ni toping.  
A)  $80^\circ$  B)  $60^\circ$  C)  $75^\circ$  D)  $70^\circ$

519. ABCD to'rtburchak aylanaga ichki chizilgan. Agar  $\angle ABC = 105^\circ$ ,  $\angle CAD = 55^\circ$  bo'lsa,  $\angle ABD$  ni toping.  
A)  $50^\circ$  B)  $60^\circ$  C)  $75^\circ$  D)  $80^\circ$

520. To'g'ri burchakli ABCD trapetsiyaning B va C burchaklari to'g'ri.  $AB = 3$ ,  $BC = 6$  va  $DC = 4$ . Trapetsiyaning D uchidan AC diogonaligacha bo'lgan masofani toping.  
A)2,4 B)3 C)3,6 D)2

521. To'g'ri burchakli ABCD trapetsiyaning B va C burchaklari to'g'ri.  $AB = 4$ ,  $BC = 3$  va  $DC = 2$ . Trapetsiyaning D uchidan AC diogonaligacha bo'lgan masofani toping.  
A)1,2 B)3 C)2,4 D)2

522. To'g'ri burchakli ABCD trapetsiyaning B va C burchaklari to'g'ri.  $AB=12$ ,  $BC = 5$  va  $DC= 6$ . Trapetsiyaning D uchidan AC diogonaligacha bo'lgan masofani toping.  
A) $2\frac{4}{13}$  B)3 C)2.5 D) 2

523. ABC uchburchak uchlarining koordinatalari berilgan:  $A(8;12)$ ,  $B(-8;0)$  va  $C(-2;8)$ . Uchburchak CM medianasi yotgan to'g'ri chiziq tenglamasini tuzing.  
A)  $x + y = 6$  B)  $x + y + 6 = 0$   
C)  $x + 2y + 3 = 0$  D)  $x - y - 6 = 0$

524. ABC uchburchak uchlarining koordinatalari berilgan:  $A(6;-8)$ ,  $B(4;6)$  va  $C(-1;2)$ . Uchburchak CM medianasi yotgan to'g'ri chiziq tenglamasini tuzing.  
A)  $x + 2y = 3$  B)  $x + y + 6 = 0$   
C)  $x + 2y + 3 = 0$  D)  $x - y - 6 = 0$

525. ABC uchburchak uchlarining koordinatalari berilgan:  $A(-6;8)$ ,  $B(10;0)$  va  $C(-3;6)$ . Uchburchak CM medianasi yotgan to'g'ri chiziq tenglamasini tuzing.  
A)  $2x + 5y = 24$  B)  $2x + 5y + 24 = 0$   
C)  $2x - 5y + 24 = 0$  D)  $2x - 5y - 24 = 0$

526. ABC uchburchak uchlarining koordinatalari berilgan: A(10;4), B(6;4) va C(-5;0). Uchburchak CM medianasi yotgan to'g'ri chiziq tenglamasini tuzing.

- A)  $4x + 13y + 20 = 0$
- B)  $4x + 13y - 20 = 0$
- C)  $4x - 13y - 20 = 0$
- D)  $4x - 13y + 20 = 0$

527. ABCD parallelogramning dioganallari O nuqtada kesishadi.  $\vec{AC} = k \cdot \vec{AO}$  tenglik bajariladigan k soning qiymatini toping.

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

528.  $\vec{a}$  va  $\vec{b}$  nolmas vektorlarning kollinearlik alomati ko'rsatilgan javobni toping.

- A)  $\vec{a} = k \cdot \vec{b}, k \neq 0$       B)  $\vec{a} \cdot \vec{b} = 0$
- C)  $\vec{c} = x \cdot \vec{a} + y \cdot \vec{b} = 0$
- D)  $\vec{c} = x \cdot \vec{a} - y \cdot \vec{b} = 0$

529.  $\vec{a}$  va  $\vec{b}$  birlik vektorlarga qurilgan parallelogramning dioganallari orasidagi burchakni toping.

- A)  $90^\circ$       B)  $60^\circ$       C)  $75^\circ$       D)  $80^\circ$

530. ABC uchburchakda D va E nuqtalar BC tomonni uchta teng qismlarga bo'ladi. (BD=DE=EC), F va G nuqtalar esa AD kesmani 3 ta teng qismlarga bo'ladi (AF=FG=GD). AFE uchburchakning yuzining ABC uchburchak yuziga nisbatini toping.

- A)  $\frac{1}{9}$       B)  $\frac{1}{3}$       C)  $\frac{1}{4}$       D)  $\frac{1}{12}$

531. ABC uchburchakda D nuqta BC tomonni ikkita teng qismlarga bo'ladi. (BD=DC), E nuqta esa AC kesmani 2 ta teng qismlarga bo'ladi (AE=ED). ACE uchburchakning yuzining ABC uchburchak yuziga nisbatini toping.

- A)  $\frac{1}{4}$       B)  $\frac{1}{3}$       C)  $\frac{1}{9}$       D)  $\frac{1}{12}$

532. ABC uchburchakda D nuqta BC tomonni ikkita teng qismlarga bo'ladi. (BD=DC), E nuqta esa AC kesmani 2 ta teng qismlarga bo'ladi (AE=ED). F nuqta esa EC kesmani ikkita teng qismlarga bo'ladi (FE=EC). AFE uchburchakning yuzining ABC uchburchak yuziga nisbatini toping.

- A)  $\frac{1}{8}$       B)  $\frac{1}{3}$
- C)  $\frac{1}{4}$       D)  $\frac{1}{12}$

@matematikaflly

533. ABCDEF muntazam oltiburchakda AC, CE, BF, FD dioganallar o'tkazilgan. AC va BF dioganallar L nuqtada CE va FD dioganallar K nuqtada kesishadi. Agar oltiburchak tomoni  $2\sqrt{3}$  ga teng bo'lsa, LCKF to'rtburchakni yuzini toping.

- A)  $8\sqrt{3}$       B)  $5\sqrt{3}$
- C)  $9\sqrt{3}$       D)  $6\sqrt{3}$

534. ABCDEF muntazam oltiburchakda AC, CE, BF, FD dioganallar o'tkazilgan. AC va BF dioganallar L nuqtada CE va FD dioganallar K nuqtada kesishadi. Agar oltiburchak tomoni  $2\sqrt{3}$  ga teng bo'lsa, CKF uchburchakni yuzini toping.

- A)  $4\sqrt{3}$       B)  $5\sqrt{3}$
- C)  $9\sqrt{3}$       D)  $6\sqrt{3}$

535. ABCDEF muntazam oltiburchakda AC, CE, BF, FD dioganallar o'tkazilgan. AC va BF dioganallar L nuqtada CE va FD dioganallar K nuqtada kesishadi. Agar oltiburchak tomoni  $2\sqrt{3}$  ga teng bo'lsa, LCK uchburchakni yuzini toping.

- A)  $4\sqrt{3}$       B)  $5\sqrt{3}$
- C)  $9\sqrt{3}$       D)  $6\sqrt{3}$

@matematikaflly

536. ABCDEF muntazam oltiburchakda AC, CE, BF, FD dioganallar o'tkazilgan. AC va BF dioganallar L nuqtada CE va FD dioganallar K nuqtada kesishadi. Agar oltiburchak tomoni  $2\sqrt{3}$  ga teng bo'lsa, LK diagonal uzunligini toping.  
A) 4    B) 5    C) 9    D) 6

537. A(3;0) va B(-1;2) nuqtalardan o'tuvchi hamda markazi  $y = x + 2$  to'g'ri chiziqda yotgan aylana tenglamasini toping.  
A)  $(x - 3)^2 + (y - 5)^2 = 25$   
B)  $(x - 4)^2 + (y - 5)^2 = 25$   
C)  $(x - 3)^2 + (y - 4)^2 = 25$   
D)  $(x - 5)^2 + (y - 3)^2 = 25$

538. ABC to'g'ri burchakli uchburchakning katetlari  $AB = 4$ ,  $AC = 6$  va AN bissektrisa bo'lsa, ABN uchburchakning yuzini toping  
A) 4,8    B) 3    C) 4    D) 4,2

539. ABC to'g'ri burchakli uchburchakning katetlari  $AB = 4$ ,  $AC = 6$  va AN bissektrisa bo'lsa, ACN uchburchakning yuzini toping  
A) 7,2    B) 6,3    C) 4,8    D) 4,2

540. ABC to'g'ri burchakli uchburchakning katetlari  $AB = 10$ ,  $AC = 15$  va AN bissektrisa bo'lsa, ACN uchburchakning yuzini toping.  
A) 45    B) 30    C) 48    D) 45

541. ABC to'g'ri burchakli uchburchakning katetlari  $AB = 10$ ,  $AC = 6$  va AN bissektrisa bo'lsa, ABN uchburchakning yuzini toping.  
A) 30    B) 48    C) 42    D) 45

542. ABC to'g'ri burchakli uchburchakning katetlari  $AB = 8$ ,  $AC = 12$  va AN bissektrisa bo'lsa, ACN uchburchakning yuzini toping.  
A) 28,8    B) 26,4    C) 19,2    D) 24,2

543. ABC to'g'ri burchakli uchburchakning katetlari  $AB = 8$ ,  $AC = 12$  va AN bissektrisa bo'lsa, ABN uchburchakning yuzini toping  
A) 19,2    B) 26,4  
C) 28,8    D) 24,2

544. Uchburchakning 10 ga teng balandligi uning asosini 10 va 4 ga teng kesmalarga ajratadi. Uchburchakning qolgan ikki tomonidan kichigiga o'tkazilgan mediananing uzunligini toping.  
A) 13    B) 14  
C) 11    D) 12

545. Uchburchakning 6 va 8 ga teng medianalari o'zaro  $90^\circ$  burchak ostida kesishadi. Uchburchakning uchinchi tomoniga o'tkazilgan mediananing uzunligini toping.  
A) 10    B) 5  
C) 15    D) 20

546. Uchburchakning 5 va 12 ga teng medianalari o'zaro  $90^\circ$  burchak ostida kesishadi. Uchburchakning uchinchi tomoniga o'tkazilgan mediananing uzunligini toping.  
A) 13    B) 5  
C) 15    D) 20

547. Uchburchakning 15 va 8 ga teng medianalari o'zaro  $90^\circ$  burchak ostida kesishadi. Uchburchakning uchinchi tomoniga o'tkazilgan mediananing uzunligini toping.  
A) 17    B) 25    C) 15    D) 20

548. Uchburchakning 3 va 4 ga teng medianalari o'zaro  $90^\circ$  burchak ostida kesishadi. Uchburchakning uchinchi tomoniga o'tkazilgan mediananing uzunligini toping.  
A) 5    B) 4  
C) 6    D) 8

549. ABC to'g'ri burchakli uchburchakda E nuqta BC tomonini  $BE:EC = 3:1$  kabi nisbatda bo'ladi. D nuqta esa AB gipotenuzada yotadi. Agar  $BD = 8$ ,  $AC = 12$  va  $\angle BAC = 60^\circ$  bo'lsa, BDE uchburchak yuzini toping.

- A)  $18\sqrt{3}$       B) 48  
C) 36              D)  $24\sqrt{3}$

550. Piramidaning tomonlari 5, 12, 13 ga teng bo'lgan uchburchakdan iborat. Piramidaning barcha ikki yoqli burchaklari  $60^\circ$  ga teng bo'lsa, uning hajmini toping.

- A)  $20\sqrt{3}$               B)  $48\sqrt{3}$   
C)  $36\sqrt{3}$               D)  $24\sqrt{3}$

551. Piramidaning tomonlari 13, 14, 15 ga teng bo'lgan uchburchakdan iborat. Piramidaning barcha ikki yoqli burchaklari  $60^\circ$  ga teng bo'lsa, uning hajmini toping.

- A)  $112\sqrt{3}$               B)  $100\sqrt{3}$   
C)  $84\sqrt{3}$               D)  $121\sqrt{3}$

552. Piramidaning tomonlari 3, 5, 6 ga teng bo'lgan uchburchakdan iborat. Piramidaning barcha ikki yoqli burchaklari  $45^\circ$  ga teng bo'lsa, uning hajmini toping.

Javob:

553. Piramidaning tomonlari 9, 40, 41 ga teng bo'lgan uchburchakdan iborat. Piramidaning barcha ikki yoqli burchaklari  $45^\circ$  ga teng bo'lsa, uning hajmini toping.

- A) 240      B) 220      C) 180      D) 192

554. Piramidaning tomonlari 4, 5, 6 ga teng bo'lgan uchburchakdan iborat. Piramidaning barcha ikki yoqli burchaklari  $45^\circ$  ga teng bo'lsa, uning hajmini toping.

- A) 10      B) 40      C) 20      D) 30

555. Piramidaning tomonlari 3, 6, 8 ga teng bo'lgan uchburchakdan iborat. Piramidaning barcha ikki yoqli burchaklari  $45^\circ$  ga teng bo'lsa, uning hajmini toping.

- A) 12      B) 32      C) 20      D) 30

556. Piramidaning tomonlari 8, 10, 12 ga teng bo'lgan uchburchakdan iborat. Piramidaning barcha ikki yoqli burchaklari  $45^\circ$  ga teng bo'lsa, uning hajmini toping.

- A) 80      B) 90      C) 120      D) 150

557. Asoslarining radiuslari  $2\sqrt{2}$  va  $11\sqrt{2}$  ga teng bo'lgan kesik konus va unga tengdosh silindrning balandliklari ham o'zaro teng bo'lsa, silindr asosining radiusini toping.

- A)  $7\sqrt{2}$               B)  $6\sqrt{2}$   
C)  $10\sqrt{2}$               D)  $8\sqrt{2}$

558. Asoslarining radiuslari  $6\sqrt{3}$  va  $12\sqrt{3}$  ga teng bo'lgan kesik konus o'rta kesim yuzini toping.

- A)  $243\pi$               B)  $225\pi$   
C)  $300\pi$               D)  $512\pi$

559. Qirralari soni 60 ga teng bo'lgan prizmaning nechta yog'i bor?

- A) 22      B) 24      C) 21      D) 20

560. Qirralari soni 30 ga teng bo'lgan prizmaning nechta yog'i bor?

- A) 12      B) 10      C) 14      D) 11

561. Qirralari soni 45 ga teng bo'lgan prizmaning nechta yog'i bor?

- A) 17      B) 15      C) 14      D) 16

562. Konusning balandligi 24 ga o'q kesimining yuzi 72 ga teng. Uning hajmini toping

- A)  $800\pi$       B)  $400\pi$       C)  $360\pi$       D)  $720\pi$



563. Konusning balandligi 24 ga o'q kesimining perimetri 72 ga teng. Konus asosining markazidan yon sirtigacha bo'lgan masofani toping.

- A)  $\frac{60}{13}$       B)  $\frac{120}{13}$   
 C)  $\frac{50}{13}$       D)  $\frac{22}{13}$

564. Konus balandligi 6 ga o'q kesimining perimetri 36 ga teng. Uning hajmini toping.

- A)  $128\pi$       B)  $200\pi$   
 C)  $256\pi$       D)  $125\pi$

565. Konusning balandligi 24 ga o'q kesimining yuzi 36 ga teng. Konus asosining markazidan yon sirtigacha bo'lgan masofani toping

- A) 4,8      B) 5,2  
 C) 9,6      D) 6,4

566. Kubga ichki va tashqi chizilgan sharlar radiuslar nisbatini toping.

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

567. Tomoni 2 ga teng bo'lgan kubning biror uchidan unga ichki chizilgan shargacha bo'lgan masofani toping.

- A)  $\sqrt{3} - 1$       B)  $\sqrt{3} - 2$   
 D)  $\sqrt{3} - 1,5$       D) 1

568. Tomoni 4 ga teng bo'lgan kubning biror uchidan unga ichki chizilgan shargacha bo'lgan masofani toping.

- A)  $2\sqrt{3} - 2$       B)  $2\sqrt{3} - 3$   
 D)  $2\sqrt{3} - 1,5$       D) 2

569. Tomoni 6 ga teng bo'lgan kubning biror uchidan unga ichki chizilgan shargacha bo'lgan masofani toping.

- A)  $3(\sqrt{3} - 1)$       B)  $3\sqrt{3} - 2$   
 D)  $3\sqrt{3} - 1,5$       D) 3

570. Tomoni 10 ga teng bo'lgan kubning biror uchidan unga ichki chizilgan shargacha bo'lgan masofani toping.

- A)  $5(\sqrt{3} - 1)$       B)  $5\sqrt{3} - 2$   
 D)  $5\sqrt{3} - 1,5$       D) 5

571. Tomoni 20 ga teng bo'lgan kubning biror uchidan unga ichki chizilgan shargacha bo'lgan masofani toping.

- A)  $10(\sqrt{3} - 1)$       B)  $10\sqrt{3} - 2$   
 D)  $10\sqrt{3} - 1,5$       D) 10

572. Hajmi 125 ga teng kubning biror uchidan unga ichki chizilgan shargacha bo'lgan masofani toping.

- A)  $2,5(\sqrt{3} - 1)$       B)  $2\sqrt{3} - 2$   
 D)  $2\sqrt{3} - 1,5$       D) 2,5

573. Hajmi 512 ga teng kubning biror uchidan unga ichki chizilgan shargacha bo'lgan masofani toping.

- A)  $4(\sqrt{3} - 1)$       B)  $4\sqrt{3} - 2$   
 D)  $4\sqrt{3} - 1,5$       D) 5

574. Diagonal 14 $\sqrt{3}$  ga teng bo'lgan kubning biror uchidan unga ichki chizilgan shargacha bo'lgan masofani toping.

- A)  $7(\sqrt{3} - 1)$       B)  $7\sqrt{3} - 2$   
 D)  $7\sqrt{3} - 1,5$       D) 3,5

575. Diagonal 16 $\sqrt{3}$  ga teng bo'lgan kubning biror uchidan unga ichki chizilgan shargacha bo'lgan masofani toping.

- A)  $8(\sqrt{3} - 1)$       B)  $7\sqrt{3} - 2$   
 D)  $8\sqrt{3} - 1,5$       D) 8

576. Radiusi 10 ga teng yarim sharga asosining markazi bilan ustma-ust tushadigan konus tashqi chizilgan. Konusning balandligi qanday bo'lganda uning hajmi eng kichik bo'ladi.

Javob:



577. Tenglamaning ildizlari kvadratlari yig'indisini hisoblang.

$$\frac{\sqrt{3+x^2}}{3+x} = 3 - x$$

Javob:

578. Tenglamaning ildizlari kvadratlari yig'indisini hisoblang.

$$\frac{\sqrt{6+x^2}}{6+x} = 6 - x$$

Javob:

579. x ning qanday qiymatlarida  $f(x) = |x^2 - 2x - 6\sin^2 x|$  funksiyaning hosilasi  $x=3$  nuqtada mavjud?

Javob:

580.  $|x^2 + x + 1| = a$  tenglama a ning qanday qiymatlarida yagona yechimga ega bo'ladi?

Javob:

581. a sonni 36 ga bo'lganda bo'linma n, qoldiq  $n^2$  ga teng bo'lsa, a sonning eng katta qiymatini toping.

Javob:

582. Ko'paytuvchilarga ajrating:

$$(a + b)^3 - (a - b)^3 - 8b^3$$

Javob:

583.  $\begin{cases} 2ax + ay - 2 = 0 \\ (a - 1)x + (a + 1)y = 1 \end{cases}$  sistema a ning qanday qiymatida aniqmas sistema bo'ladi?

Javob:

584.  $P(x) = (x + a + b)^3 - 3(x + a + b) + 3$  Ko'phadni  $2+x+a+b$  ko'phadga bo'lgandagi qoldiqni toping.

Javob:

585. To'g'ri to'rtburchakning ichidan olingan nuqtadan uning uchlarigacha masofalar ketma-ket 1, 5, 7 bo'lsa, to'rtinchi uchigacha bo'lgan masofani toping.

586.  $6x^4 - 7x^3 + px^2 + 3x + 2$  ko'phad  $x^2 - x + q$  ga bo'linsa, p va q ni toping.

Javob:

587.  $(x + 1)^n - x^n - 1$  ko'phad  $x^2 + x + 1$  ga bo'linsa, n ning barchaa natural qiymatlarini yig'indisini toping.

Javob:

588.  $x^9 + x^3 + 10x + 5$  ko'phadni  $x^2 + 1$  ga bo'lgandagi qoldiqni toping.

Javob:

589.  $\sqrt[3]{6 + \sqrt{\frac{847}{27}}} + \sqrt[3]{6 - \sqrt{\frac{847}{27}}}$  ni hisoblang:

Javob:

590.  $\overline{abc1}$  soni  $\overline{2abc}$  dan 3 marta katta bo'lsa,  $\overline{abc}$  sonni toping.

Javob:

591.  $34x5y$  soni 36 ga bo'linadigan nechta x va y juftligi bor?

Javob:

592.  $x^2 - 63x + k = 0$  tenglamaning ikkala ildizi ham tub son bo'ladigan k natural sonlar nechta?

Javob:

593.  $f(x + 1) = f(x) + 2x + 1$  va  $f(0)=1$  bo'lsa,  $f(15)$  ni hisoblang.

Javob:

594.  $f(x + 1) = f(x) + 2x + 1$  va  $f(0)=-1$  bo'lsa,  $f(19)$  ni hisoblang.

Javob:

595. N sonining natural bo'luvchilari ketma-ket yozib chiqildi. 6 chi va 20 chi o'rinda turgan sonning ko'paytmasi N ga teng bo'lsa, N ni toping.

Javob:

596. Teng yonli uchburchakning yon tomonlari  $a$  va asosi  $b$  ga teng bo'lsa, unga ichki va tashqi chizilgan aylana markazlari orasidagi masofani toping.  
Javob:

597. 5 ta mandarin va 4 ta olmadan nechta mandarin va olma juftligini tuzish mumkin?  
Javob:

598. Teng yonli uchburchakning asosi 8 ga va yon tomoniga tushirilgan medianasi 10 ga teng bo'lsa, yon tomonini toping.  
Javob:

599. Katetlari  $a$  va  $b$  ga teng bo'lgan to'g'ri burchakli uchburchakning katta katetiga urinib shu katet qarshisidagi uch orqali o'tib, markazi gipotenuzada bo'lgan doiraning yuzini toping.  
Javob:

600. Katetlari  $a$  va  $b$  ga teng bo'lgan to'g'ri burchakli uchburchakning katta katetiga urinib shu katet qarshisidagi uch orqali o'tib, markazi gipotenuzada bo'lgan aylananing uzunligini toping.  
Javob:

601. Katetlari  $a$  va  $b$  ga teng bo'lgan to'g'ri burchakli uchburchakning katta katetiga urinib shu katet qarshisidagi uch orqali o'tib, markazi gipotenuzada bo'lgan doiraning radiusini toping.  
Javob:

602. 3 ta yashikda 64,2  $kg$  olma bor. Ikkinchi yashikda birinchisining 0,8 qismicha olma, uchinchi yashikda ikkinchisining 42,5% iga teng olma bor bo'lsa, uchinchi yashikda qancha olma bor?  
Javob:

603. 3 ta yashikda 64,2  $kg$  olma bor. Ikkinchi yashikda birinchisining 0,8 qismicha olma, uchinchi yashikda ikkinchisining 42,5% iga teng olma bor bo'lsa, ikkinchi yashikda qancha olma bor?  
Javob:

604. 3 ta yashikda 64,2  $kg$  olma bor. Ikkinchi yashikda birinchisining 0,8 qismicha olma, uchinchi yashikda ikkinchisining 42,5% iga teng olma bor bo'lsa, birinchi yashikda qancha olma bor?  
Javob:

605. Uchburchakning uchta tomoni  $a$ , ga teng bo'lsa, unga ichki chizilgan aylana radiusini toping.  
Javob:

606. Uchburchakning uchta tomoni  $a$ , ga teng bo'lsa, unga tashqi chizilgan aylana radiusini toping.  
Javob:

607.  $\frac{x^3+27}{x+3}$  ifodaning eng kichik butun qiymatini toping.  
Javob:

608. Prizma bu – ...  
Javob:

609. Teng yonli uchburchakning asosi  $a$  ga va yon tomoni  $b$  ga teng bo'lsa, asosidagi burchakning kosinusini toping.  
Javob:

610. Teng yonli uchburchakning asosi  $a$  ga va yon tomoni  $b$  ga teng bo'lsa, asosidagi burchakning sinusini toping.  
Javob:

611. Teng yonli uchburchakning asosi  $a$  ga va yon tomoni  $b$  ga teng bo'lsa, asosidagi burchakning tangensini toping.  
Javob:

612. Teng yonli uchburchakning asosi  $a$  ga va yon tomoni  $b$  ga teng bo'lsa, asosidagi burchakning kotangensini toping.  
Javob:

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613. Teng yonli uchburchakning asosi  $a$  ga va yon tomoni  $b$  ga teng bo'lsa, uchidagi burchakning kosinusini toping.  
Javob:

614. Teng yonli uchburchakning asosi  $a$  ga va yon tomoni  $b$  ga teng bo'lsa, uchidagi burchakning sinusini toping.  
Javob:

615. Teng yonli uchburchakning asosi  $a$  ga va yon tomoni  $b$  ga teng bo'lsa, uchidagi burchakning tangensini toping.  
Javob:

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616. Teng yonli uchburchakning asosi  $a$  ga va yon tomoni  $b$  ga teng bo'lsa, uchidagi burchakning kotangensini toping.  
Javob:

617. Prizmaning asosi tomonlari 5 va 6 bo'lgan hamda o'tkir burchagi  $45^\circ$  bo'lgan parallelogrammdan iborat. Agar prizmaning yon qirradi 4 ga teng va u asos tekisligi bilan  $30^\circ$  burchak tashkil qilsa, prizma hajmini toping.  
Javob:

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618. Prizmaning asosi tomonlari 5 va 6 bo'lgan hamda o'tkir burchagi  $45^\circ$  bo'lgan parallelogrammdan iborat. Agar prizmaning yon qirradi 4 ga teng va u asos tekisligi bilan  $30^\circ$  burchak tashkil qilsa, yon sirtini toping.  
Javob:

619. Prizmaning asosi tomonlari 5 va 6 bo'lgan hamda o'tkir burchagi  $45^\circ$  bo'lgan parallelogrammdan iborat. Agar prizmaning yon qirradi 4 ga teng va u asos tekisligi bilan  $30^\circ$  burchak tashkil qilsa, to'la sirtini toping.  
Javob:

620. Prizmaning asosi tomonlari 5 va 6 bo'lgan hamda o'tkir burchagi  $45^\circ$  bo'lgan parallelogrammdan iborat. Agar prizmaning yon qirradi 4 ga teng va u asos tekisligi bilan  $30^\circ$  burchak tashkil qilsa, balandligini toping.  
Javob:

621. Teng yonli trapetsiyaning asoslari 30 va 24 ga teng. Bu trapetsiyaning diagonallari o'zaro perpendikulyar bo'lsa, uning yuzini toping.  
Javob:

622. Bir burchagi  $60^\circ$  bo'lgan to'g'ri burchakli uchburchakka tomoni  $a$  ga teng bo'lgan romb shunday ichki chizilganki,  $60^\circ$  li burchak ular uchun umumiy, rombnings barcha uchlari rombnings tomonlarida yotadi. Uchburchakning yuzini toping.  
Javob:

623. Bir burchagi  $60^\circ$  bo'lgan to'g'ri burchakli uchburchakka tomoni  $a$  ga teng bo'lgan romb shunday ichki chizilganki,  $60^\circ$  li burchak ular uchun umumiy, rombnings barcha uchlari rombnings tomonlarida yotadi. Uchburchakning perimetrini toping.

624. Bir burchagi  $60^\circ$  bo'lgan to'g'ri burchakli uchburchakka tomoni  $a$  ga teng bo'lgan romb shunday ichki chizilganki,  $60^\circ$  li burchak ular uchun umumiy, rombnings barcha uchlari rombnings tomonlarida yotadi. Uchburchakning tomonlarini toping. Javob:

625. Bir burchagi  $30^\circ$  bo'lgan to'g'ri burchakli uchburchakka tomoni  $a$  ga teng bo'lgan romb shunday ichki chizilganki,  $30^\circ$  li burchak ular uchun umumiy, rombnings barcha uchlari rombnings tomonlarida yotadi. Uchburchakning yuzini toping. Javob:

626. Bir burchagi  $30^\circ$  bo'lgan to'g'ri burchakli uchburchakka tomoni  $a$  ga teng bo'lgan romb shunday ichki chizilganki,  $30^\circ$  li burchak ular uchun umumiy, rombnings barcha uchlari rombnings tomonlarida yotadi. Uchburchakning perimetrini toping. Javob:

627. Bir burchagi  $30^\circ$  bo'lgan to'g'ri burchakli uchburchakka tomoni  $a$  ga teng bo'lgan romb shunday ichki chizilganki,  $30^\circ$  li burchak ular uchun umumiy, rombnings barcha uchlari rombnings tomonlarida yotadi. Uchburchakning tomonlarini toping. Javob:

628. Bir burchagi  $45^\circ$  bo'lgan to'g'ri burchakli uchburchakka tomoni  $a$  ga teng bo'lgan romb shunday ichki chizilganki,  $45^\circ$  li burchak ular uchun umumiy, rombnings barcha uchlari rombnings tomonlarida yotadi. Uchburchakning yuzini toping. Javob:

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629. Bir burchagi  $45^\circ$  bo'lgan to'g'ri burchakli uchburchakka tomoni  $a$  ga teng bo'lgan romb shunday ichki chizilganki,  $45^\circ$  li burchak ular uchun umumiy, rombnings barcha uchlari rombnings tomonlarida yotadi. Uchburchakning perimetrini toping. Javob:

630. Bir burchagi  $45^\circ$  bo'lgan to'g'ri burchakli uchburchakka tomoni  $a$  ga teng bo'lgan romb shunday ichki chizilganki,  $45^\circ$  li burchak ular uchun umumiy, rombnings barcha uchlari rombnings tomonlarida yotadi. Uchburchakning tomonlarini toping. Javob:

631. Bir nuqtadan aylanaga ikkita urinma o'tkazilgan. Har bir urinmaning uzunligi  $15\text{ sm}$ , urinish nuqtalari orasidagi masofa  $24\text{ sm}$ . Shu aylananing uzunligini toping. Javob:

632. Quyidagi tasdiqlarning qaysilari to'g'ri?  
1) *Trapetsiyaning o'rta chizig'i uning dioganallarini teng ikkiga bo'ladi;*  
2) *Agar teng yonli trapetsiyaning dioganali uning katta asosidagi burchagi bissektrissasi bo'lsa, u holda katta asos yon tomonga teng bo'ladi;*  
3) *Agar teng yonli trapetsiyaning dioganali uning kichik asosidagi burchagi bissektrissasi bo'lsa, u holda katta asos yon tomonga teng bo'ladi.*  
Javob:

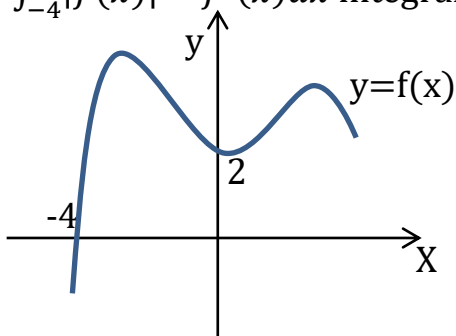
633.  $x^{30} + x^{18} + x^7 + 1$  ko'phadni  $x^6 - x^2$  ga bo'lgandagi qoldiqni toping. Javob:

634.  $g(x) = x - 3$  va  $f(g(x)) = 3x^2 - 7x + 5$  bo'lsa,  $f'(g(x)) = ?$   
Javob:

635.  $(x - 4)^3 + (x - 4)^2 + (x - 4) \cdot (x - 3) + (x - 3)^2 + (x - 3)^3 = 6$  tenglamani yeching:  
Javob:

636. Bir nuqtadan aylanaga ikkita urinma o'tkazilgan. Har bir urinmaning uzunligi 20 sm, urinish nuqtalari orasidagi masofa 24 sm. Aylana uzunligini toping.  
Javob:

637.  $y = f(x)$  funksiya grafiqi berilgan.  $\int_{-4}^0 |f(x)|^2 \cdot f'(x) dx$  integralni toping.



Javob:

638.  $\begin{vmatrix} 2018 & 2019 \\ 2020 & 2021 \end{vmatrix}$  determinantni hisoblang.  
Javob:

639.  $n$  sonining natural bo'luvchlari ketma - ket yozib chiqildi. 6 - va 20 - o'rinda turgan sonlarning ko'paytmasi  $n$  ga teng bo'lsa,  $n$  ning natural bo'luvchilari nechta?  
Javob:

640. To'g'ri burchakli uchburchakning gipotenuzasida nuqta olingan va shu nuqtadan katetlarga bo'lgan masofalar teng. Bu nuqta gipotenuzani 30 va 40 sm li kesmalarga ajratadi. Uchburchakning yuzini toping.  
Javob:

641.  $y = |x^2 + 2x - 3| - |x + 1|$  bo'lsa,  $f'(1) = ?$   
Javob:

642.  $A(1;3;5)$  va  $B(-2;3;5)$  nuqtalar berilgan.  $C(x;0;0)$  nuqta  $A$  va  $B$  nuqtalardan bir xil uzoqlikda bo'lsa,  $x = ?$   
Javob:

643.  $ABC$  uchburchakda  $\angle C = 90^\circ$ ,  $\cos B = 5/13$ ,  $AB = 39$  bo'lsa,  $AC = ?$   
Javob:

644.  $(-3; -4)$  nuqtadan  $Ox$  o'qigacha bo'lgan masofani toping.  
Javob:

645.  $(-3; -4)$  nuqtadan  $Oy$  o'qigacha bo'lgan masofani toping.  
Javob:

646. Integralni hisoblang:

$$\int_1^4 \frac{1}{x^2} dx$$

Javob:

647.  $(m - 2)x^2 - 8x + 5$  ifoda  $x$  ning barcha qiymatlarida  $-2$  dan kichik bo'lsa,  $m$  ni toping.  
Javob:

648.  $(\log_{11} x)^2 \leq 1$  tengsizlikning eng katta va eng kichik yechimlarining ko'pytmagini toping.  
Javob:

649.  $x$  ning qanday qiymatlarida  $f(x) = x^2 - 3x + 1$  funksiyaning hosilasi o'zidan kichik bo'ladi?  
Javob:

650. Temirning 72% i kesib olindi. Qolgan qismining og'irligi 64,2 kg bo'lsa, temirning kesib olingan qismining og'irligini toping.



651.  $\cos(\pi x) = 1$  tenglamaning (1;6) oraliqdagi ildizlari ko'paytmasini toping.  
Javob:

652.  $|x-3| < 4$  tengsizlikning butun ildizlarini toping.  
Javob:

653. Koordinatalar tekisligida  $|x| + |y-1| \leq 4$  tengsizlikning yechimlari hosil qilgan soha yuzini toping.  
Javob:

654. Koordinatalar tekisligida  $|x+3| + |y-1| \leq 2$  tengsizlikning yechimlari hosil qilgan soha yuzini toping.  
Javob:

655.  $(2x - 1)^{10} \cdot (x + 1)^2$  ko'phadni koeffitsiyentlari yig'indisini toping.  
Javob:

656. 10 kishi tennis musobaqasida oltin, kumush va bronza medallarini necha xil usulda olishi mumkin?  
Javob:

657. 5, 9, 13, ... ketma - ketlikning nechta hadi yig'indisi 13705 bo'ladi?  
Javob:

658.  $\overline{x714y5}$  soni 55 ga bo'linsa,  $x=?$   
Javob:

659. Soddashtiring:  
 $\operatorname{tg}\alpha + \operatorname{ctg}\alpha + \operatorname{tg}3\alpha + \operatorname{ctg}3\alpha = ?$

660.  $R$  radiusli aylanaga trapetsiya ichki chizilgan. Trapetsiyaning pastki asosi qolgan tomonlaridan ikki marta 2 marta katta. Trapetsiyaning yuzini toping.  
Javob:

661. Hisoblang:  $\int_4^{16} \sqrt{x} dx$   
Javob:

662.  $y = 5 - 3^{x-2}$  funksiyaning qiymatlar sohasini toping.  
Javob:

663. Muntazam uchburchakli  $ABCA_1B_1C_1$  prizmaaning asosi tomoni 1 ga teng.  $|\overrightarrow{CE} - \overrightarrow{CB_1}|$  ni toping.  
Javob:

664. 5 ta olma, 4 ta nok, 2 ta behidan bittadan olib nechta guruhlash tuzish mumkin?  
Javob:

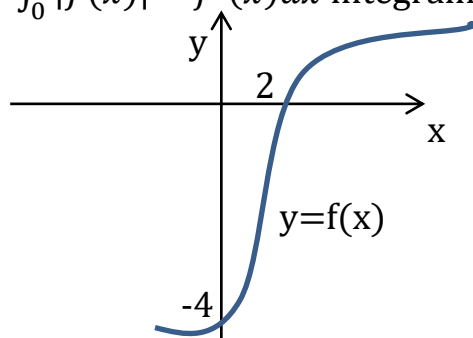
665.  $\log_5^2(5x - 4) = 5 \cdot \log_5(5x - 4)$  tenglamani yeching.  
Javob:

666. Agar  $(x - 5)^{10} + (2x - 9)^5 = 0$  bo'lsa,  $10-x$  ni hisoblang.  
Javob:

667. Hisoblang:  $\sqrt{12 - \sqrt{80}} - \sqrt{12 + \sqrt{80}}$   
Javob:

668. Kubning diagonali va u bilan kesishmaydigan qirrasini orasidagi masofa 5 ga teng bo'lsa, kubning hajmini toping.  
Javob:

669.  $y = f(x)$  funksiya grafigi berilgan.  $\int_0^2 |f(x)|^3 \cdot f'(x) dx$  integralni toping.



Javob:

670. To'g'ri burchakli uchburchakning gipotenuzasida nuqta olingan va shu nuqtadan katetlarga bo'lgan masofalar teng. Bu nuqta gipotenuzani  $\frac{100}{3}$  va  $\frac{50}{3}$  sm li kesmalarga ajratadi. Uchburchakning katta katetini toping.  
Javob:

671.  $A = \{x: |x-3| < 4, x \in \mathbb{N}\}$  to'plamning elementlari sonini toping.  
Javob:

672. Asosi muntazama uchburchakdan tashkil topgan piramidani apofemasi 15 ga, balandligi 9 ga teng bo'lsa, piramidaning hajmini toping.  
Javob:

673.  $\cos 140^\circ + \cos 120^\circ + \cos 20^\circ$  ni hisoblang.  
Javob:

674.  $y = 2^x - 2$  funksiyaning qiymatlar sohasini toping.  
Javob:

675.  $(a - 7b)^2 - 42b + 6a$  ifodaning eng kichik qiymatini toping.  
Javob:

676.  $ABCD$  trapetsiyaning asoslari  $AD=30$  va  $BC=24$  hamda  $AB=12, \angle A=60^\circ$ . Diagonallari  $O$  nuqtada kesishadi.  $COD$  uchburchak yuzini toping.  
Javob:

677. Konusning yasovchisi 15 ga teng. Yon sirtining yuzi  $135\pi$  ga teng bo'lsa, shu konusga ichki chizilgan shar hajmini toping.  
Javob:

678.  $\int_{-3}^1 \frac{1}{x^3} dx$  integralni hisoblang.  
Javob:

679. To'g'ri burchakli trapetsiyaning diagonalini yon tomoniga teng. Balandligi 6 ga, yon tomoni 12 ga teng bo'lsa, o'rta chizig'ini toping.  
Javob:

680. Koordinatalar tekisligida  $|x+3| + |y+1| \leq 6$  tengsizlikning yechimlari tashkil etgan sohaning yuzini toping.  
Javob:

681.  $1^3 + 2^3 + 3^3 + \dots + 12^3$  son qaysi sonning kvadrati bo'ladi?  
Javob:

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682.  $ABCD$  qavariq to'rtburchakka aylana ichki chizilgan.  $AB=3, BC=4, CD=5$  bo'lsa,  $AD=?$   
Javob:

683. Yon tomoni 17 ga teng bo'lgan teng yonli trapetsiyaga diametri 15 ga teng bo'lgan aylana ichki chizilgan. Trapetsiyaning asoslarini toping.  
Javob:

684. Agar  $\begin{cases} \operatorname{tg} \alpha + \operatorname{tg} \beta = 4 \\ \operatorname{ctg} \alpha + \operatorname{ctg} \beta = 2 \end{cases}$  bo'lsa,  $\operatorname{tg}(\alpha + \beta) = ?$   
Javob:

685.  $ABCD$  parallelogramning  $BC$  tomonida  $E$  nuqta olingan.  $A$  burchak bissektrisasi  $E$  nuqtada  $BC$  tomon bilan kesishadi.  $AB=9, AD=15$  bo'lsa,  $BE$  va  $EC$  ni toping.  
Javob:

686.  $y = \left(\frac{2}{3}\right)^{-2+x^2}$  funksiyaning qiymatlar sohasini toping.  
Javob:

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687.  $\int (kx + b)^{p+4} dx$  integralni hisoblang.

Javob:

688. 300 dan keyin keladigan to'rtinchi tub sonni 2 ga bo'lgandagi qoldiqni toping.

Javob:

689.  $|x^2 - 11x + 24| = |x^2 - 12|$  tenglamaning natural ildizlari yig'indisining eng katta ildizga nisbatini toping.

Javob:

690.  $tg^2 x + ctg^2 x$  ning eng kichik qiymatini toping.

Javob:

691.  $y = ax^2 - bx + c$  funksiyaning grafigi 1 -, 2 -, 4 - choraklardan o'tishi uchun  $a, b$  lar qanday munosabatda bo'lishi kerak?

Javob:

692. Qirradi 50 sm ga teng kubning ichini qirradi 5 sm ga teng kubchalar bilan to'ldirish uchun nechta kubcha kerak bo'ladi?

Javob:

693. To'g'ri burchakli uchburchakning gipotenuzasi 6 ga, ichki chizilgan aylana radiusi 1 ga teng bo'lsa, uchburchakning perimetrini toping.

Javob:

694. Muntazam ko'pburchakka ichki va tashqi chizilgan aylanalar radiusilari  $R$  va  $r$ , tomoni  $a$  ga teng bo'lsa,  $\frac{(R-r)(R+r)}{a^2}$  ni toping.

Javob:

695.  $\int \sin 3x dx$  ni toping.

Javob:

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696.  $x \cdot \sqrt{x^2 - 10} \geq x^2 - 6$  tengsizlikni qanoatlantiruvchi butun sonlarning yig'indisini toping.

Javob:

697. 6 xonali son berilgan. Uning birinchi raqami 1 ga teng. Shu sonning birinchi raqamini uning oxiriga ko'chirsak, berilgan sondan uch marta katta son hosil bo'ladi. U qaysi son?

Javob:

698.  $\sin 54^\circ \cdot \sin 18^\circ$  ni hisoblang?

Javob:

699. Teng yonli to'g'ri burchakli uchburchakka ichki chizilgan aylana radiusi  $r$  ga teng bo'lsa, uning yarim perimetrini toping.

Javob:

700.  $|x| + a - 3 \geq 0$  tengsizlik  $x$  ning barcha qiymatlarida o'rinli bo'lsa,  $a = ?$

Javob:

701.  $y = -2,6x + b$  funksiyaning grafigi  $C(1;12)$  nuqtadan o'tsa,  $b$  ni toping.

Javob:

702.  $A(-a-2; a-5)$  nuqta koordinatalar tekisligining 4 - choragida joylashgan bo'lsa,  $a = ?$

Javob:

703.  $n$  ta uchi bo'lgan prizmaning nechta diagonal kesimi mavjud?

Javob:

704. Alpinist birinchi kuni 800 m balandlikka chiqdi. Qolgan kunlari oldingi kunga qaraganda 25 m kam balandlikka chiqdi. U 6300 m ga necha kunda ko'tarilgan?

Javob:

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705.  $ABC$  uchburchak balandliklari kesishish nuqtasi  $H$ , ichki chizilgan aylana markazi esa  $I$ . Agar  $\angle A=40^\circ$ ,  $\angle B=75^\circ$  ga teng bo'lsa,  $IAH$  burchakni toping.  
Javob:

706.  $1^3 + 2^3 + 3^3 + \dots + 10^3$  son qaysi sonning kvadrati?  
Javob:

707. 6 ni 7 ga bo'lganda hosil bo'ladigan sonning 2018 - o'rnida turgan raqamini toping.  
Javob:

708.  $x^2 - 7|x| + 10 = a$  tenglama  $a$  ning qanday qiymatida 3 ta yechimga ega bo'ladi?  
Javob:

709. To'g'ri burchakli uchburchakning o'tkir burchagi bissektrisasi qarshisidagi katetni 2 va 3 ga teng kesmalarga ajratadi. Uchburchakning yuzini toping.  
Javob:

710. Agar  $f^3(x)$  va  $\frac{1}{f(x)}$  funksiyalarning  $x=1$  nuqtadagi hosilalari 9 va -3 bo'lsa,  $f'(1)$  ni hisoblang.  
Javob:

711.  $1+2+4+\dots+2^{22}$  ni hisoblang.  
Javob:

712. Tenglamani yeching:  

$$\sqrt{x + \sqrt{x + \sqrt{x + \dots}}} = \sqrt{x \sqrt{x \sqrt{x \dots}}}$$
 Javob:

713.  $y=|x^2-6x-1|$  funksiyaning eng kichik qiymatini toping.  
Javob: @matematikafly

714. Aniqmas integralni hisoblang:  

$$\int x \cdot \ln x dx$$
 Javob:

715. Tenglamani yeching:  

$$|\sin x + \cos x| = \sqrt{2} \sin 2x$$
 Javob:

716. Diyora dugonasining telefon raqamining oxirgi raqamini esidan chiqarib qo'ydi. Uning bir urinishda unutilgan raqamni topish imkonining ehtimoli nimaga teng?  
Javob: 110

717.  $\frac{1}{p}$  sof davriy kasrning 2018 - raqami 2 ga teng bo'lsa,  $\frac{p-1}{p}$  ning 2018 - raqamini toping.  
Javob: 7

718. Tomoni  $a$  ga teng bo'lgan kvadrat shunday qir qilganki, natijada eng katta yuzaga ega bo'lgan muntazam sakkizburchak hosil bo'lgan. Sakkizburchakning yuzini toping.  
Javob:

719.  $y=|x^2-6x-1|$  funksiyaning eng kichik qiymatini toping.  
Javob:

720.  $|3+2x-x^2|=a$  tenglama  $a$  ning qanday qiymatlarida 3 ta yechimga ega?  
Javob:

721.  $\frac{x}{10} + \frac{y}{12} = 0,15$  to'g'ri chiziqning  $Oy$  o'qi bilan hosil qilgan burchagi  $\alpha$  bo'lsa,  $\text{tg}\alpha + \text{ctg}\alpha$  ni toping.  
Javob:

722.  $y=x^x$  funksiyaning hosilasini toping.  
Javob: @matematikafly

723. Quti sirtini 75%ini bo'yash uchun 450 gr bo'yoq ishlatildi. Quti sirtini 100% ini bo'yash uchun necha kg bo'yoq ishlatiladi.

Javob:

724.  $y=ax^2-bx+c$  kvadrat funksiyaning grafigi 1 - va 2 - choraklarda bo'lishi uchun  $a$  va  $b$  sonlar qanday munosabatda bo'lishi kerak?

Javob:

725.  $y=\ln(6\sin x-8\cos x)$  funksiyaning qiymatlari sohasini toping.

Javob:

726. Teng yonli to'g'ri burchakli  $ABC$  uchburchak berilgan.  $AB$  gipotenuzada yotuvchi  $M$  va  $N$  nuqtalar shunday olinganki,  $AM=AC$ ,  $BN=BC$ ,  $\angle MCN=?$

Javob:

727. Tomoni 18 ga teng bo'lgan  $ABCD$  kvadrat berilgan.  $M$  nuqta  $BC$  tomonni teng ikkiga,  $N$  nuqta  $DC$  tomonni 2:1 nisbatda bo'ladi.  $ABMN$  to'rtburchak yuzini toping.

Javob:

728.  $f^2(x)$  va  $\frac{1}{f(x)}$  funksiyalarning  $x=10$  nuqtadagi hosilalari mos ravishda 4 va  $-2$  ga teng bo'lsa,  $f'(10)$  ni toping.

Javob:

729.  $x^2+y^2-12|x|-12|y|+63\leq 0$  tengsizlikning yechimlari hosil qilgan sohaning yuzini toping.

Javob:

730.  $a$  va  $b$  ni 4 ga bo'lganda har xil qoldiq qolsa,  $a^2-b^2$  ni 8 ga bo'lganda qanday qoldiqlar qolishi mumkin?

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731.  $y=x(x-2)(x-4)(x-6)+2015$  funksiya eng kichik qiymatiga ega bo'ladigan  $x$  larning yig'indisini toping.

Javob:

732. Oddiy kasr qachon noto'g'ri kasr bo'ladi?

Javob:

733.  $ABC$  uchburchakda  $AC=15$ ,  $BC=41$ ,  $AB=52$  ga teng.  $AB$  tomonda  $D$  nuqta shunday olinganki  $AD:DB=15:37$ .  $CD=?$

Javob:

734.  $1\cdot 2+2\cdot 3+3\cdot 4+\dots+99\cdot 100-1^2-2^2-\dots-100^2$  ni hisoblang.

Javob:

735.  $ABC$  uchburchak  $PQK$  uchburchakka teng.  $PQK$  uchburchakning burchaklari  $40^\circ, 60^\circ, 80^\circ$  ga teng.  $ABC$  uchburchakning burchaklarini toping.

Javob:

736. Uchta son geometrik progressiya hosil qiladi. Ularning yig'indisi 19 ga, ko'paytmasi 216 ga teng. Bu hadlar kvadratlarining yig'indisini toping.

Javob:

737. 5 ta juft raqamdan foydalanib nechta 5 xonali son hosil qilish mumkin?

Javob:2500

738. 7 ta bola izma - iz bir qatorda turibdi. Ularning turgan o'rinlarini almashtirib nechta qator tuzish mumkin?

Javob:

739. 8 ni 7 ga bo'lganda hosil bo'ladigan sonning 2018 - o'rnida turgan raqamini toping.

Javob:

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740.  $ax^3+bx^2+1$  ko'phad  $x^2+x-1$  ga bo'linsa,  $a$  va  $b$  butun sonlarning yig'indisini toping.

Javob:

741.  $p(x)=x^2-mx-4$ ,  $p(-1)=4$  bo'lsa,  $p(-2)=?$

Javob:

742.  $y = g(x) \cdot \frac{1}{2\sqrt{x}}$ ;  $g(x) = 2x + 3$   $y$  funksiyaning hosilasini toping.

Javob:

743. Bir necha xonali natural sonning oxiriga ikkita nol raqami yozildi va hosil bo'lgan sondan dastlabki son ayrildi. Hosil bo'lgan son quyidagilarning qaysi biriga bo'linmaydi?

1) 9; 2) 3; 3) 11; 4) 55.

744.  $2^x - 2^{-x} + 4 = a^2 - 5a$  tenglama yechimga ega bo'lmaydigan  $a$  ning qiymatlarini toping.

Javob:

745. Uchburchakning tomonlari 7, 8, 9 ga teng. Katta tomoniga yopishgan burchaklarining bissektrisalarini o'tkazishdan uchta uchburchak va bitta to'rtburchak ajraladi.

Uchburchakning uzunligi 7 ga teng bo'lgan tomoniga yopishgan uchburchakning yuzini toping.

Javob:

746. Qutida 45 ta shar bor. Ulardan 17 tasi oq bo'lib, 2 ta oq bo'lmagan shar yo'qolib qoldi. Qutidan bittalab olinganda oq sharning tushish ehtimolini toping.

Javob:

747.  $P(x)$  – ko'phad.

$(x-1) \cdot P(x) = (x+5) \cdot P(x-1)$  bo'lsa,  $P(x)$  ni toping.

748. Teng yonli uchburchakning uchidagi burchagi  $120^\circ$  ga, asosi 6 ga teng.

Balandliklarining kesishish nuqtasidan asosiga parallel holda o'tuvchi tekislik atrofida

aylantirishdan hosil bo'lgan jismning hajmini toping.

Javob:

749.  $\cos 20^\circ - 2\cos 40^\circ - \cos 80^\circ$  ni hisoblang.

Javob:

750.  $x^2 \cdot 4\sqrt{x} < 4\sqrt{x+1}$  tengsizlikni yeching.

Javob:

751.  $\frac{\arcsin \frac{8}{17} - \arctg \frac{1}{4}}{\arctg 4}$  ni hisoblang.

Javob:

752. 6 ta katakni 2 ta qizil, 1 ta oq, 1 ta ko'k, 1 ta qora, 1 ta yashilga necha xil usul bilan bo'yash mumkin?

Javob:

753.  $y=x^2+3x+1$  funksiyaning hosilasi o'ziga teng bo'lganda,  $x$  ni toping.

Javob:

754. Muntazam oltiburchakli prizmaning yon yog'ining yuzi  $Q$  ga teng. Shu prizmaning eng katta diagonal kesimi yuzini toping.

Javob:

755. Muntazam oltiburchakli prizmaning yon yog'ining yuzi  $Q$  ga teng. Shu prizmaning eng kichik diagonal kesimi yuzini toping.

Javob:

756.  $f(x)=x^2 \cdot \text{ctgx} \cdot \ln x$  bo'lsa,  $f'(1)$  ni toping.

Javob:

757. To'g'ri burchakli parallelepiped asosi tomonlari 8 va 15 ga teng. Agar uning diagonalini asos bilan  $45^\circ$  li burchak tashkil etsa, uning hajmini toping.  
Javob:

758.  $y = \sqrt{kx + l}$  funksiyaning hosilasini toping.  
Javob:

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759.  $y = \frac{a^{g(x)} + c}{\ln a}$  funksiyaning hosilasini toping.  
Javob:

760. Ikkita konsentrik aylanalardan kattasining uzunligi 40 sm ga teng bo'lgan vatari kichigiga urinadi. Agar halqaning kengligi 10 sm bo'lsa, katta aylananing radiusini toping.  
Javob:

761. Ikkita konsentrik aylanalardan kattasining uzunligi 40 sm ga teng bo'lgan vatari kichigiga urinadi. Agar halqaning kengligi 10 sm bo'lsa, kichik aylananing radiusini toping.  
Javob:

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762. Ikkita konsentrik aylanalardan kattasining uzunligi 40 sm ga teng bo'lgan vatari kichigiga urinadi. Agar halqaning kengligi 10 sm bo'lsa, halqaning yuzini toping.  
Javob:

763. Muntazam oltiburchak ichidan ixtiyoriy nuqta olingan. Bu nuqtadan tomonlargacha bo'lgan masofalar yig'indisi 18 ga teng bo'lsa, oltiburchak yuzini toping.  
Javob:

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764. Muntazam oltiburchak ichidan ixtiyoriy nuqta olingan. Bu nuqtadan tomonlargacha bo'lgan masofalar yig'indisi 18 ga teng bo'lsa, oltiburchak perimetrini toping.  
Javob:

765. Parallelogrammning perimetri 120 ga, o'tkir burchagi  $60^\circ$  ga teng. Diagonalini o'tmas burchagini 3:1 nisbatda bo'lsa, uning yuzini toping.  
Javob:

766. Bir odamning oddiy yilning 7 - sanasida tug'ilish ehtimolini toping.  
Javob:

767.  $f(2x-3) = 2x-2$  bo'lsa,  $f(f(5))$  ni toping.  
Javob:

768. Trapetsiyaning asoslari 24 va 30 ga, asosidagi burchaklaridan biri  $60^\circ$  ga teng. Yon tomonlari davom ettirilganda  $90^\circ$  burchak ostida kesishsa, trapetsiyaning yuzini toping.  
Javob:

769. Kubni nechta simmetrik bo'lakka bo'lish mumkin?  
Javob:

770. Rombning diagonalari  $a$  va  $a\sqrt{3}$  bo'lishi uchun rombning burchaklari necha gradusdan bo'lishi kerak?  
Javob:

771. To'g'ri burchakli uchburchakka ichki chizilgan aylana radiusi 3 ga, bir kateti esa 10 ga teng. Shu uchburchakka tashqi chizilgan aylana radiusini toping.  
Javob:

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772. Asosidagi burchagi  $75^\circ$  ga, yon tomoni uzunligi esa  $\sqrt{2 + \sqrt{3}}$  ga teng bo'lgan teng yonli uchburchakning asosini toping.

Javob:

773.  $(x^2+2x)(x^2+2x-3) \geq 40$  tengsizlikni qanoatlantirmaydigan eng katta va eng kichik butun yechimlarini yig'indisini toping.

Javob:

774.  $\int_3^5 \frac{x^2-4x+5}{x-2} dx$  integralni hisoblang.

Javob:

775. Qutida "kombinatorika" so'zini hosil qiluvchi barcha harflar bor. Ixtiyoriy tanlashda "k" harfi chiqish ehtimolligini toping.

Javob:

776. Konsertga boshlovchilikka 4 o'g'il bola va 2 ta qiz boladan bitta qiz va bitta yigitni tanlash uchun nechta usul bor?

Javob:

777.  $y=3x^2$  funksiya grafigini 4 birlik yuqoriga, 2 birlik o'ngga siljitish (parallel ko'chirish) natijasida hosil bo'lgan funktsiyani toping.

Javob:

778.  $(\operatorname{tg} 5^\circ + \operatorname{tg} 3^\circ) \cdot \operatorname{ctg} 8^\circ + (\operatorname{tg} 5^\circ - \operatorname{tg} 3^\circ) \cdot \operatorname{ctg} 2^\circ$  ifodani soddalashtiring.

Javob:

779. 9 ta xatni 9 xil joyga 2 tadan necha xil usul bilan tarqatish mumkin.

Javob:

780.  $\sqrt{1+x^2-x} + \sqrt{1+x^2-\sqrt{3}x} = \sqrt{2}$  tenglamani yeching.

Javob:

781.  $\int \frac{1}{1+x^4} dx$  integralni hisoblang.

Javob:

782. Aylanaga uchta vatar o'tkazilgan. Har bir vatar juft - juft bo'lib kesishadi va har bir vatar teng uchta qismga ajraladi. Bir vatarning uzunligi 9 ga teng bo'lsa, aylananing radiusini toping.

Javob:

783.  $f(x)+x=2 \cdot f(2x)$  bo'lsa,  $f(x)=?$

Javob:

Davomi va javoblari keyingi sonlarda!!!

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