BAHORDA VA KUZDA TUSHGAN

SAVOLLAR BAZASI

JAMI 300 TA SAVOL

1. $\frac{\left(\frac{a-b}{\sqrt{a}+\sqrt{b}}\right)^3+2a\sqrt{a}+b\sqrt{b}}{3a^2+3b\sqrt{ab}}+\frac{\sqrt{ab}-a}{a\sqrt{a}-b\sqrt{a}}$ ni soddalashtiring.

A) 0 B) $\frac{1}{\sqrt{a}-\sqrt{b}}$ C) $\frac{2}{\sqrt{a}-\sqrt{b}}$ D) $\frac{2}{\sqrt{a}+\sqrt{b}}$

2. Ketma-ket kelgan natural sonlar uchun $\text{EKUK}(A,B)=89+EKUB(A,B)$ bo'lsa, A+B ning qiymatini toping.

A) 21 B) 19 C) 17 D) 15

3. $15^{231}+2$ ni 16 ga bo'lgandagi qoldiqni toping.

A) 10 B) 11 C) 1 D) 0

4. $\sin 2x=(\cos x-\sin x)^2$ tenglamaning $(0;180°)$ oraliqdagi ildizlari yig'indisini toping.

A) $75°$ B) $105°$ C) $90°$ D) $120°$

5. $a(a+3)x^2+(2a+6)x-3a-9=0$ tenglama bitta ildizga ega bo'ladigan a ning qiymatlari yig'indisini toping.

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

6. $y=\sqrt{-x^2+6x+16}+\log_3(x-1)$ funksiyaning aniqlanish sohasiga tegishli barcha butun qiymatlari yig'indisini toping.

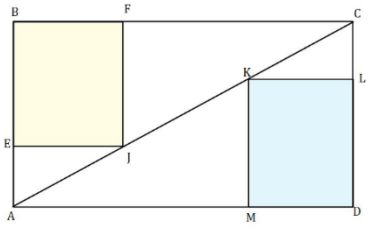
A) 38 B) 37 C) 36 D) 35

7. $f(x) = (x^3 - 2x^2 + x + 1)^n$ uchun $f'(2) = 540$ bo'lsa, n ning natural qiymatini toping?

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

8. AD $= 16$ va DC $= 12$ bo'lsa, $S_{BFJE} + S_{KLDM}$ ni eng katta qiymatini toping.

A) 48 B) 96 C) 54 D) 108

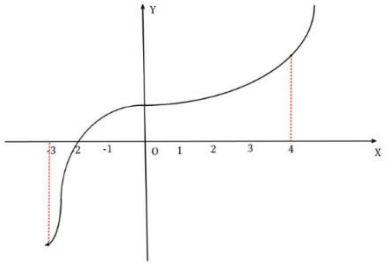


9. $\int x^2 \cdot f(x)dx = x^4 - 4x^3$ bo'lsa, $f(3) + f'(3)$ ni toping.

A) 12 B) 8 C) 6 D) 4

10. Rasmdagi $f(x)$ funksiya grafigi tasvirlangan. $\int_{-3}^{-2} f(x)dx = -4$ va $\int_{-2}^{4} |f(x)|dx = 6$ bo'lsa, $\int_{-3}^{4} f(x)dx - \int_{-3}^{4} |f(x)|dx$ ni toping.

A) -2 B) -10 C) -12 D) -8



11. $x^2 = 6y$ va $y^2 = 6x$ funsiyalar bilan chegaralangan sohani Oy o'q atrofida aylantirishdan hosil bo'lgan jism hajmini toping.

A) 72π B) $\frac{216}{5}\pi$ C) $\frac{324}{5}\pi$ D) 75π

12. $xy + (x+1)y' = 0$ differensial tenglamani yeching.

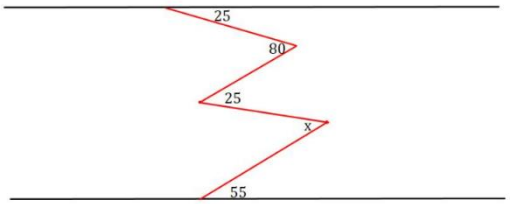
A) $y = Ce^{x(x+1)}$ B) $y = Cxe^{x+1}$
C) $y = Cxe^{-x-1}$ D) $y = C(x+1)e^{-x}$

13. $\frac{x+g(f(x))}{2} = 3x + 5$ va $g(x) = 3x + 5$ bo'lsa, $3 \cdot f(-2)$ ni toping.

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

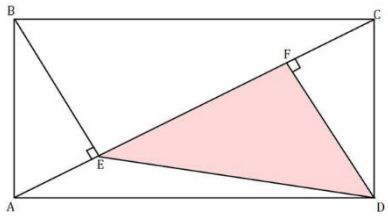
14. Rasmdagi ma'lumotlardan foydalanib x ni toping.

A) 27^0 B) 54^0 C) 24^0 D) 25^0



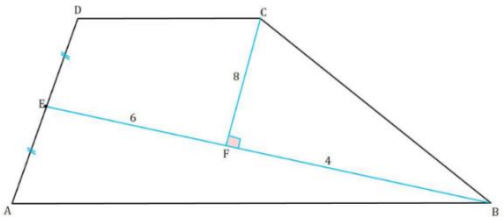
15. $DE = \sqrt{117}$ va $EF = 9$ bo'lsa, S_{ABCD} ni toping.

A) 96 B) 90 C) 80 D) 72



16. Rasmdagi ma'lumotlardan foydalanib, S_{ABCD} ni toping.

A) 80 B) 72 C) 64 D) 48

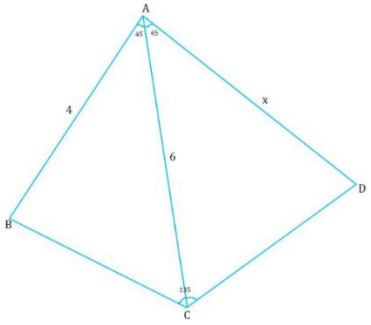


17. $\vec{n}$ va $\vec{m}$ birlik vektorlar $120°$ burchak tashkil qiladi. $2\vec{m} + 4\vec{n}$ va $\vec{m} - \vec{n}$ vektorlar orasidagi burchakni toping.

A) 90^0 B) 120^0 C) 135^0 D) 180^0

18. Rasmda $\angle BCD = 135°$ va $\angle BAC = \angle CAD = 45°$ bo'lsa, x ni toping.

A) 9 B) 7 C) $6\sqrt{2}$ D) $5\sqrt{2}$



19. Uchburchakli og'ma prizma yon qirralari orasidagi masofalar mos ravishda $18{,}5\ \text{cm}$; $6{,}5\ \text{cm}$ va $15\ \text{cm}$. Prizma yon sirti yuzi $240\ \text{cm}^2$. Prizma hajmini toping.

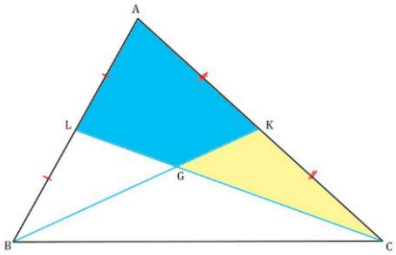
A) 270 B) 240 C) 210 D)180

20. Agar $g^{-1}(f^{-1}(x)) = 2x + 3, g(x) = 7x + 6$ bo'lsa, $f(x)$ ni toping.

A) $f(x) = \frac{x-27}{14}$ B) $f(x) = \frac{14x-27}{3}$
C) $f(x) = 14x + 27$ D) $f(x) = 14 + 8$

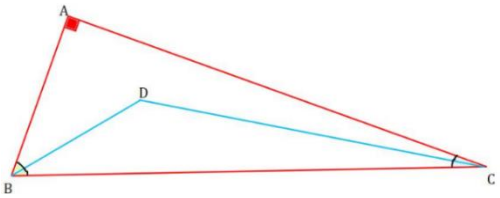
21. $S_{GKC} = 8$ bo'lsa, $S_{ADGK)}$ ni toping.

A) 24 B) 18 C) 16 D) 8



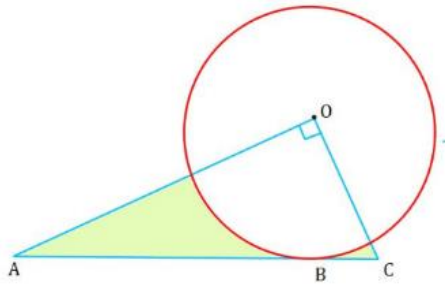
22. ABC Uchburchakda $\angle BAC = 90°$, $BD = 4, DC = 4\sqrt{2}$ bo'lib, D nuqta bissektrissalar kesishish nuqatasi bo'lsa, BC ni toping.

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



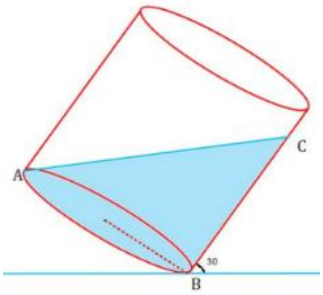
23. $\angle AOC = 90°, \text{AB} = 4$ va $\text{BC} = 9$ bo'lsa, bo'yalgan soha yuzini toping.($\pi \approx 3$ deb oling)

A) 10 B) 11 C) 12 D) 13



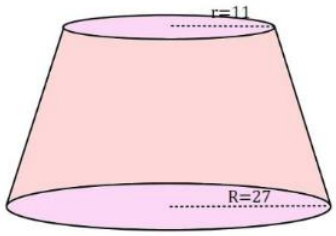
24. Rasmda berilgan ma'lumotlar va $BC = 4\sqrt{3}$ ekanligidan, Suv hajmini aniqlang.

A) 8π B) $\frac{8\sqrt{3}}{3}\pi$ C) $8\sqrt{3}\pi$ D) $\frac{16\sqrt{3}}{3}\pi$



25. Konus yasovchisi va balandligi nisbati 17:15 bo'lsa, kesik konus o'q kesimi yuzini toping.

A) 1140 B) 1040 C) 1240 D) 960



26. Piramida asos tomonlari 6,8 va 10 ga va barcha ikki yoqli burchaklari $60°$ ga teng bo'lsa, piramida hajmini toping.

A) $\frac{16\sqrt{3}}{3}\pi$ B) $16\sqrt{3}\pi$ C) $16\sqrt{3}$ D) $\frac{16\sqrt{3}}{3}$

27. $\sqrt{7-x^2+6x} < 2x+6$ tengsizlikning butun yechimlari yig'indisini toping.

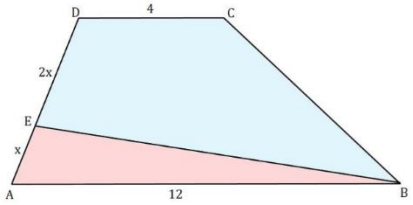
A) 24 B) 26 C) 27 D) 28

28. Birinchi idishda 10 ta shar bo'lib, ularning 8 tasi oq. Ikkinchi idishda 20 ta shar bo'lib, ularning 4 tasi oq. Har bir idishdan tavakkaliga bittadan shar olinib, keyin bu ikki shardan yana bitta shar tavakkaliga olindi. Oq shar olinganlik ehtimolini toping.

A) 0,4 B) 0,56 C) 0,54 D) 0,5

29. $ABCD$ trapetsiyaning asoslari 4 va 12 ga teng bo'lib, $AE:ED = 1:2$ bo'lsa, $S_{ABE}:S_{CDEB}$ ni toping.

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

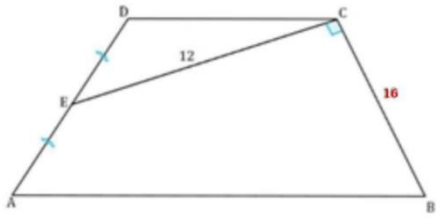


30. $y = x,\ y = 0$ va $\sqrt{x}+\sqrt{y}=2$ funksiyalar bilan chegaralangan sohaning yuzini toping.

A) $2\frac{5}{6}$ B) $1\frac{1}{3}$ C) 1,5 D) 1,2

31. Rasmdagi ma'lumotlardan foydalanib trapetsiya yuzini toping. CE=12, CB=16

A) 192 B) 162 C) $96\sqrt{2}$ D) 200

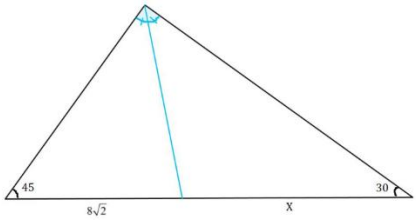


32. Uch o'lchovli fazoda uchlari $A(3;0;0)$, $B(0;4;0)$ va $C(0;0;5)$ nuqtalarda bo'lgan parallelepipedning to'la sirtini toping.

A) 84 B) 94 C) 104 D) 114

33. Berilganlarga ko'ra x ni toping.

A) $8\sqrt{2}$ B) 16 C) $8\sqrt{3}$ D) 12



34. Agar $3 \cdot x$ va $5 \cdot y$ sonlar o'zaro tub bo'lib,

$$\text{EKUK}(3x;5y) + \text{EKUB}(3x;5y) = 46$$

bo'lsa, $3x + 5y$ ni toping.

A) 18 B) 16 C) 14 D) 12

35. $y = \sqrt{-x^2 + 6x + 7} + \log_3(x-1)$ ning aniqlanish sohasiga tegishli butun sonlar yig'indisini toping?

A) 24 B) 25 C) 26 D) 27

36. Mulohazalarni moslashtiring:

1. Muntazam ko'pburchakka tashqi chizilgan aylana radiusi: $R = \frac{a}{2\text{tg}\frac{180^\circ}{n}}$

2. Konusning to'la sirtini topish formulasi:

$$S = \pi R(R + l)$$

3. Slindrning yon sirtini yuzini topish formulasi:

$$S = 2\pi R^2 H$$

A) 1- to'g'ri; 2- to'g'ri; 3- to'g'ri
B) 1- noto'g'ri; 2- to'g'ri; 3- noto'g'ri
C) 1- to'g'ri; 2- to'g'ri; 3- noto'g'ri
D) 1- noto'g'ri; 2- to'g'ri; 3- to'g'ri

37. $6x^2 + (4k^2 - 5k - 1)x - k^2 = 0$ kvadrat tenglamaning ildizlari qarama-qarshi sonlardan iborat bo'ladigan bo'lsa, k ning barcha qiymatlar yig'indisini toping?

A) 0.25 B) -0.25 C) 1.25 D) -1.25

38. Radiusi 6 , yasovchisi 10 ga teng bo'lgan konus asos yuzasi 64π ga teng bo'lgan silindr ichiga tushirildi va konusning yarmi botguncha suv quyildi. Solingan suv hajmini toping.

A) 208π B) 180π C) 160π D) 172π

39. Ikki ishchi buyurtmani bajarishdi. Birinchi ishchi 1 soat ishlagandan so'ng, ikkala ishchi birgalikda 4 soat ishladi va ishni 40% ni bajardi. Agar ishni birinchi ishchi ikkinchi ishchidan 5 soat ko'p vaqtda bajarsa, qolgan ishni birinchi ishchi necha soatda bajaradi?

A) 6 B) 15 C) 20 D) 25

40. 3 ta lift bor. Birinchi liftga 3 ta odam, ikkinchi va uchinchi liftga 2 tadan odam chiqsa bo'ladi. 7 ta odamni necha xil usul bilan bu liftlarga chiqarish mumkin.

A) 180 B) 200 C) 210 D) 240

41. $\frac{1}{\sqrt{1}+\sqrt{3}} + \frac{1}{\sqrt{3}+\sqrt{5}} + \frac{1}{\sqrt{5}+\sqrt{7}} + \cdots + \frac{1}{\sqrt{47}+\sqrt{49}}$ ni hisoblang.

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

42. 2 ta ovchining nishonga urish ehtimoli 0,6 ga teng. Ikkala ovchiga ham 2 tadan imkon berildi. Otilgan o'qning kamida 1 tasi nishonga tegish ehtimoli nimaga teng.

A) 0,9744 B) 0, 0256 C) 0,68 D) 0,32

43. $\frac{\arcsin\frac{3}{5}}{\operatorname{arctg}\frac{24}{7}}$ ni hisoblang.

A) 1 B) 2 C) $\frac{1}{2}$ D) $\frac{25}{32}$

44. Agar geometrik progresiyada $(q > 1)$, $\log_2 b_1 + \log_2 b_2 + \log_2 b_3 + \log_2 b_4 + \log_2 b_5 = 15$ va $\log_2 b_1 \cdot \log_2 b_5 = -7$ bo'lsa, $b_1 + b_2 + b_3 + b_4 + b_5$ ni toping.

A) 170 B) 170,5 C) 164 D) 166,5

45. Uzunligi 100 metr bo'lgan aylanani 2 jism qarama-qarshi yunalganda 5 minutda, bir xil yunalishda harakatlanganda 25 minutda uchrashadi. Ikkala jismning tezliklari ko'paymasini toping.

A) 108 B) 96 C) 90 D) 84

46. Agar $f^{-1}(h(x) + g(x)) = h(x).\, g(x), h(4) = 3$ va $g(4) = 2$ bo'lsa, $f(6)$ ni toping.

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

47. 6 ta avtomat mashinani ishlash ehtimoli 0.95 ga 4 ta yarim avtamat mashina ishlash ehtimoli 0.8 ga teng. Ishlatilayotgan mashinaning ishlash ehtimolini toping.

A) 0,86 B) 0,87 C) 0,89 D) 0,91

48. Sirojiddinda 3 ta fizika va 2 ta matematika kitob bor. Matematika kitoblarini yonma-yon qilib necha xil usulda joylashtirish mumkin?

A) 24 B) 48 C) 32 D) 36

49. Uchta son bor. Ikkinchi son birinchisidan qancha ko'p bo'lsa uchinchi son ikkinchi sondan shuncha ko'p. Sonlarning eng kichik 2 tasini ko'paytmasi 85 va eng katta 2 tasining ko'paytmasi 115 ga teng. Shu sonlarning yig'indisini toping?

A) 28 B) 30 C) 32 D) 34

50. Anvar,Bexruz,Sobir,Doniyor,Erkin ishchilar mos ravishda ishni $6,12,18,24$ va 36 kunda tugatadi. Ular birgalikda 2 kun ishladi va 4 ta ishchi ketdi. Qolgan ishni 6 kunda qaysi ishchi tugatadi?

A) Anvar B) Bexruz C) Sobir D) Doniyor

51. Agar $\bar{a} = (-3,-1), \bar{b} = (2,-1), \bar{c} = (5,-4)$ vektorlar uchun $3\bar{c} = m\bar{a} + n\bar{b}$ tenglik o'rinli bo'lsa, $n + m$ ning qiymatini toping.

A) 13 B) 12 C) 15 D) 11

52. Ikki son o'rta arifmetigi 15 ga teng bo'lib, o'rta arifmetigi o'rta geometrigidan 25% ga katta bo'lsa, shu sonlar kvadratlarining yig'indisini toping.

A) 624 B) 729 C) 612 D) 724

53. $y^2 = x$ va $y = \frac{x}{2}$ funksiyalar kesishishidan hosil bo'lgan yuzani Ox atrofida aylantirishdan hosil bo'lgan jism hajmini toping.

A) $\frac{7\pi}{3}$ B) $\frac{5\pi}{3}$ C) $\frac{8\pi}{3}$ D) $\frac{10\pi}{3}$

54. $\sqrt[3]{7-5\sqrt{2}} + \sqrt[3]{7+5\sqrt{2}}$ ni hisoblang.

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

55. Hajmi V ga teng bo'lgan silindirning o'q kesimi diagnallari orasidagi burchak 2α bo'lsa, silindr asosining radiusini toping?

A) $\sqrt[3]{\frac{Vtg\alpha}{2\pi}}$ B) $\sqrt[3]{\frac{Vctg\alpha}{\pi}}$ C) $\sqrt[3]{\frac{Vtg\alpha}{\pi}}$ D) $\sqrt[3]{\frac{Vctg\alpha}{2\pi}}$

56. Sinfda 5 ta o'quvchi tez yuguradi, 4 ta o'quvchi uzunlikka yaxshi sakraydi, 3 ta o'quvchi balanlikka yaxshi sakraydi. Har bir sport turi buyicha 2 tadan jami 6 ta o'quvchini necha xil usulda tanlash mumkin?

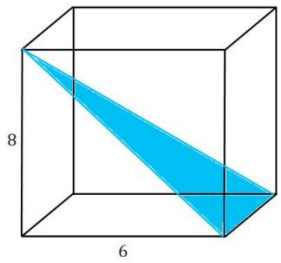
A) 120 B) 160 C) 180 D) 210

57. Asosining tomonlari 3 va 7 ga teng bo'lgan muntazam uchburchakli kesik pramidaga shar ichki chizilgan. Kesik pramidaning yon sirtini toping?

A) $\frac{25}{\sqrt{3}}$ B) $\frac{50}{\sqrt{3}}$ C) $\frac{100}{\sqrt{3}}$ D) $\frac{75}{\sqrt{3}}$

58. To'g'ri burchakli parallelopipedning hajmi 192, balandligi 8 va bo'yi 6 ga teng bo'lsa quyidagi bo'yalgan kesmining yuzini toping.

A) 12 B) 18 C) 20 D) 24



59. $f(2x+1)+f(x+2)=x^2-5x+3$ bo'lsa, $f'(3)$ ni toping.

A) $-1{,}5$ B) -1 C) 0 D) 1

60. $\sqrt{y^2+1}=xyy'$ differensial tenglamani yeching?

A) $\sqrt{y^2+1}=lnx+C$ B) $\sqrt{y^2+1}=2lnx+C$
C) $\sqrt{y+1}=lnx^2+C$ D) $\sqrt{y^2-1}=lnx+C$

61. $5x - y + 7 = 0$ va $2x - 3y + 1 = 0$ to'g'ri chiziqlar orasidagi o'tmas burchakni toping.

A) $45°$ B) $60°$ C) $120°$ D) $135°$

62. Uchburchakli to'g'ri pirizmaning asoslari 6, 8, 10 va yon qirrasi 15 ga teng. Asosining kichik balanligi va yon qirrasi orqali kesim o'tkazilgan, kesim yuzini toping?

A) 36 B) 48 C) 60 D) 72

63. $f(2x+1) = x^2 + 6x + 12$ bo'lsa, $f'(5)$ ning qiymatini toping.

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

64. Agar $f(x) + f'(x) = x^3 + 2x^2 + 4x + 1$ bo'lsa, $f(x-1)$ funksiyani toping.

A) $f(x-1) = x^3 - x^2 + 6x - 5$
B) $f(x-1) = x^4 + x^3 - 6x - 5$
C) $f(x-1) = x^4 - x^3 + 6x - 5$
D) $f(x-1) = x^3 - 4x^2 + 11x - 13$

65. Soat 12: 40 da soatning soat va minut millari orasidagi burchakni toping

A) $240°$ B) $140°$ C) $160°$ D) $80°$

66. Ketma-ket kelgan 3 ta toq sonning yig'indisi 12021 ga teng bo'lsa, kichigining qiymatini toping.

A) 2007 B) 2003 C) 4005 D) 4013

67. $2^{2024}+1$ sonini 17 ga bo'lgandagi qoldiqni toping.

A) 1 B) 2 C) 16 D) 0

68. $10^{2721}+5$ sonini 17 bo'lgandagi qoldiqni toping.

A) 16 B) 15 C) 10 D) 14

69. Ikkita ketma-ket kelgan 3 ga karrali bo'lgan sonlarni m va n lar uchun $EKUB(m;n)+EKUK(m;n)=471$ bo'ladi. Bunga ko'ra, $m+n$ ning qiymatini toping.

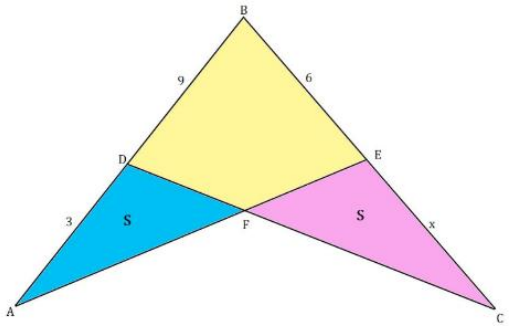
A) 36 B) 39 C) 75 D) 81

70. Agar $\int (f'(x)-2x)dx = 2f(x)+x^3-x^2$ bo'lsa, $f'(1)$ ning qiymatini toping

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

71. Rasmda berilgan ma'lumotlar asosida, x kesmaning qiymatini toping.

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



72. $f(x)=\sin 2x$ funksiyaning $M(0;1)$ nuqtadan o'tuvchi boshlang'ich funksioyasini toping.

A) $-\cos 2x+2$ B) $-\frac{1}{2}\cos 2x+\frac{3}{2}$

C) $\frac{1}{2}\cos 2x+\frac{1}{2}$ D) $\cos 2x$

73. x_1 va x_2 sonlari $x^2-(m+4)x+2m-1=0$ tenglamaning ildizlari. m ning nechta butun qiymatida ushbu $x_1^2x_2+x_1x_2^2\le 0$ tengsizlik o'rinli bo'ladi?

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

74. $4f(x)+f(2\pi-x)=2x^3+8$ bo'lsa $f'(\pi)$ ning qiymatini toping.

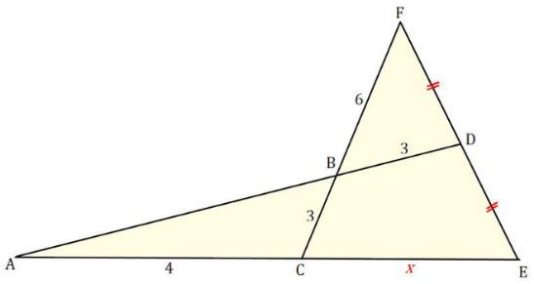
A) $6\pi^2$ B) $3\pi^2$ C) $2\pi^2$ D) $4\pi^2$

75. $\int f(x)dx=x^3+3x^2+mx+n$ va $f(1)=10$ bo'lsa, $F(3)-F(0)$ni toping. (Bu yerda $F(x)-f(x)$ funksiyaning boshlang'ich funksiyasi)

A) 53 B) 57 C) 59 D) aniqlab bo'lmaydi

76. Rasmdagi ma'lumotlardan foydalanib CE ni uzunligini toping.

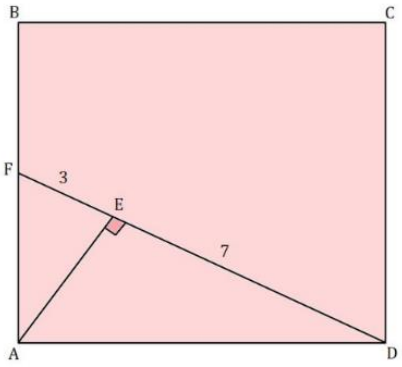
A) 3 B) 4 C) 5 D) 6



77. 3 ta g'oz, 4 ta o'rdak va 2 ta tovuqdan 1 tadan tanlab nechta guruh tuzish mumkin.

A) 10 B) 12 C) 18 D) 24

78. ABCD kvadratning yuzini toping.



A) 60 B) 70 C) 80 D) 84

79. Asosining tomonlari 25; 29 va 36 ga teng bo'lgan uchburchakli piramidaning barcha yon yoqlari asos tekisligi bilan bir xil burchak tashkil qilib, balandligi 6 ga teng. Shu piramidaga ichki chizilgan konusning hajmini toping.

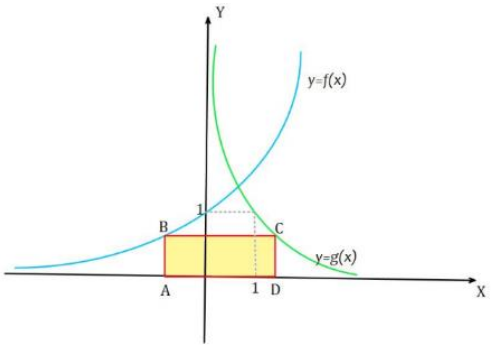
A) 288π B) 244π C) 144π D) 128π

80. Qirralari o'zaro perpendikulyar bo'lgan uchburchakli piramida berilgan.
Qirralari 5,8, 12 ga teng bo'lsa, Piramida hajmini toping.

A) 120 B) 100 C) 80 D) 60

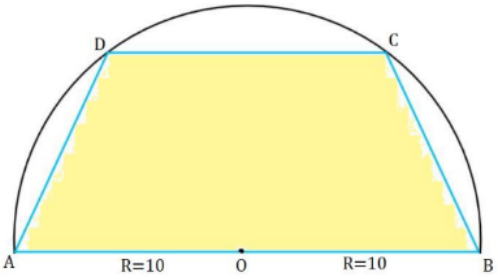
81. ABCD to'rtburchakning yuzi eng katta bo'ladigan C nuqtaning ordinatasini toping. Bu yerda, $f(x) = e^x$ va $g(x) = \frac{1}{x}$.

A) $\frac{1}{2}$ B) $\frac{e}{2}$ C) $\frac{2}{e}$ D) $\frac{1}{e}$



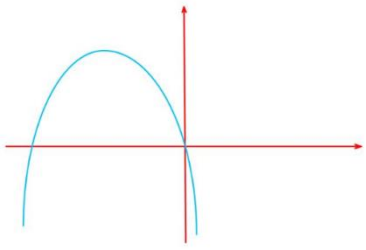
82. Radusi 10 ga teng bo'lgan yarim doiraga ichki chizilgan eng katta yuzali trapetsiyaning yuzini toping.

A) $8\sqrt{3}$ B) $100\sqrt{3}$ C) $75\sqrt{3}$ D) $10\sqrt{3}$



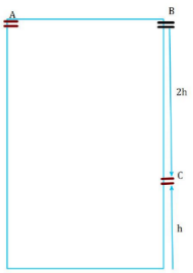
83. $y = ax^2 + bx + c$ kvadrat funksiya grafigi berilgan. Grafikdan foydalanib a, b, c larni taqqoslang.

A) $b < a < c$ B) $a < c < b$
C) $b < c < a$ D) $c < a < b$



84. Bo'sh idishni A quvurning bitta o'zi 6 soatda, B quvurning yolg'iz o'zi 3 soatda to'ldiradi. C quvur esa, idishning $\frac{2}{3}$ qismini 4 soatda bo'shatadi.
Uchtala quvur birgalikda bo'sh idishni qancha vaqtda to'ldiradi.

A) $\frac{8}{3}$ B) 2,5 C) $\frac{7}{5}$ D) $\frac{9}{5}$



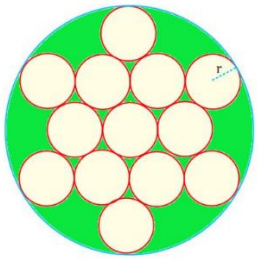
85. $y = x^2 + 1$ va $y = 2$ funksiyalar bilan chegaralangan soxani Oy o'qi atrofida aylantirishdan hosil bo'lgan hajmni toping.

A) $\frac{\pi}{2}$ B) $\frac{2\pi}{3}$ C) $\frac{3\pi}{2}$ D) π

86. $y'(x+1) = xy$ differensial tenglamani yeching.

A) $y = \frac{Ce^x}{x+1}$ B) $y = \frac{Ce^x}{x-1}$
C) $y = C(x+1)e^x$ D) $y = C(x+1)e^{-x}$

87. Kichik doiralar raduslari o'zaro teng va $r = 2$. Bo'yalgan yashil sohaning yuzini toping.



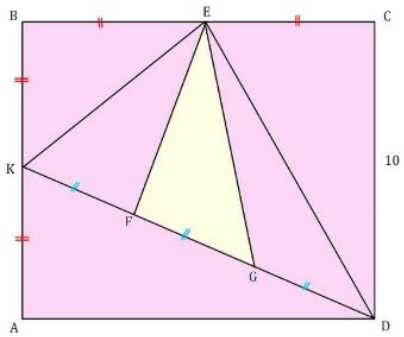
A) $8\sqrt{3}\pi$ B) $\frac{44}{\sqrt{3}}\pi$ C) $\frac{52}{\sqrt{3}}\pi$ D) $16\sqrt{3}\pi$

88. 1-qotishmadagi metallarning nisbat 2:3, 2-qotishmadagi xuddi shu metallarning nisbati $3:4$. Metallarni nisbati 11:15 bõlgan qotishma tayyorlash uchun ikkala qotishmadan qanday ulush qõshiladi?

A) 1- qotishma 5 ulush, 2- qotishma 21 ulush
B) 1- qotishma 6 ulush, 2- qotishma 20 ulush
C) 1- qotishma 7 ulush, 2- qotishma 19 ulush
D) 1- qotishma 8 ulush, 2- qotishma 18 ulush

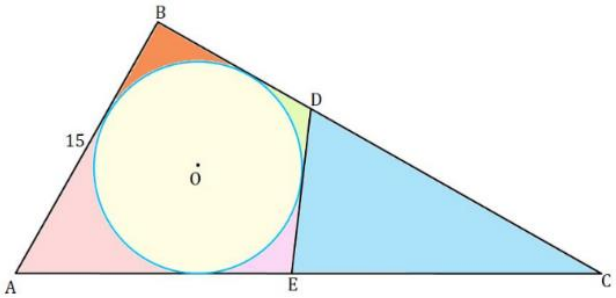
89. Rasmdagi ABCD kvadrat bo'lsa, S(EFG) uchburchak yuzini toping.

A) 14 B) 12,5 C) 12 D) $8\frac{1}{3}$



90. $P(EDC) = 16$ va $AB = 15$ bo'lsa, $P(ABC)$ ni toping.

A) 30 B) 40 C) 46 D) 47

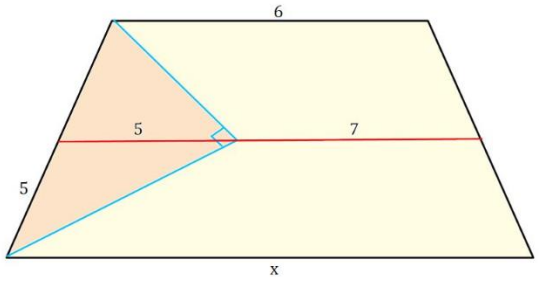


91. To'rtta son olingan. Ularning dastlabki 3 tasi geometrik progressiya, oxirgi 3 tasi arifmetil progressiya tashkil qiladi. Chetki hadlari yigindisi 21 ga, o'rtadagi 2 ta hadining yig'indisi 18 ga teng. To'rtala sonning ko'paytmasini toping.

A) 3636 B) 3838 C) 3888 D) 3996

92. Rasmdagi ma'lumotlarga ko'ra, x ni toping.

A) 15 B) 16 C) 17 D) 18

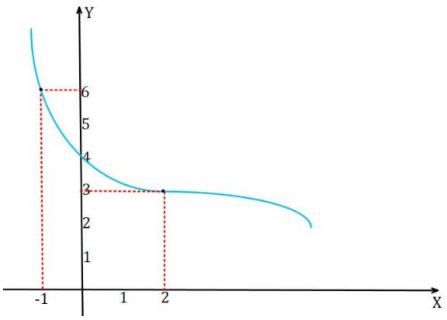


93. O'quvchilarning 75% i A tilni, 65% i B tilni biladi. Ikkala tilni ham biladiganlarning 3 barobari, ikkala tilni ham bilmaydiganlarning 11 barobariga teng. Ikkala tilni ham biladiganlar necha foizni tashkil etadi.

A) 40% B) 45% C) 50% D) 55%

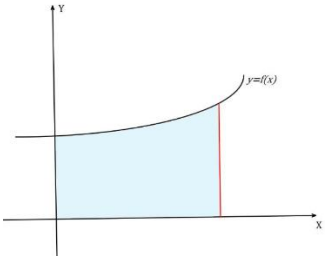
94. $\int_{-1}^{2} x \cdot f'(x)dx = 10$ bo'lsa, $\int_{-1}^{2} f(x)dx$ ni toping.

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



95. k ning qanday qiymatida $y = ke^{\frac{x}{2}}$ funksiyani $x = 2, x = 0$ va $y = 0$ to'g'ri chiziqlar bilan chegaralangan soxaning yuzasi uni Ox o'qi atrofida aylantirishdan hosil bo'lgan jism hajmiga teng bo'ladi.

A) $\frac{2}{\pi(e-1)}$ B) $\frac{2e}{\pi}$ C) $\frac{2}{\pi(e+1)}$ D) $\frac{2}{e\pi}$

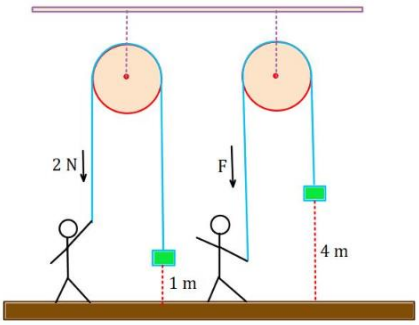


96. $y = \sqrt{x}$ va $y = \frac{x}{2}$ chiziqlar bilan chegaralangan soxani Oy o'qi atrofida aylantirishdan hosil bo'lgan jism hajmini toping.

A) $\frac{65}{14}\pi$ B) $\frac{64}{15}\pi$ C) $9\frac{7}{15}\pi$ D) $8{,}4\pi$

97. Rasmdagi bola 1- holatda jismni ko'tarish uchun $\frac{dF}{dh} = \frac{1}{\sqrt{h}} + 3 + \frac{1}{(h+1)}$ qonuniyat bo'yicha 2 N kuch sarflasa, 2- holat uchun qancha kuch (N) sarflaydi?

A) 13 B) $13 - ln\frac{5}{2}$ C) $13 + ln\frac{5}{2}$ D) 11,5



98. Piramida asosi uchburchakdan iborat tomoni $25,29,36$. Piramida balandligi 6. Piramidaga ichki chizilgan shar radusini toping.

A) $\frac{10}{3}$ B) $\frac{7}{2}$ C) $\frac{7}{3}$ D) $\frac{8}{3}$

99. Konusning radiusi 15 ga teng. Konus asosiga parallel kesim o'tkazildi bu kesim konus uchidan 2:3 nisbatda. Shu kesim yuzini toping.

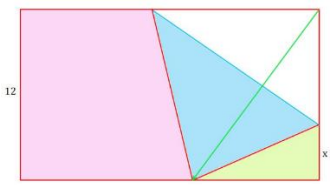
A) 24π B) 30π C) 36π D) 40π

100. $F(x) = \frac{1}{x+1}$ bo'lsa, $\int_2^3 (F^{-1}(x))dx$ni toping.

A) $ln\frac{3e}{2}$ B) $ln\frac{3}{2e}$ C) $ln\frac{3}{e}$ D) $ln\frac{3}{2}$

101. Rasmda to'g'ri to'rtburchakning bir uchini qarma-qarshi tomoniga tekkunicha qayirib buklab qo'yilgan. Kichik tomon 12 ga teng bo'lsa, sariq rangga bo'yalgan yuza eng katta bo'lgandagi x ning qiymatini toping.

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



102. Yasovchisi 41 va balandli 40 bo'lgan konusga asosiga parallel to'gri chiziq o'tkazilgan. Chiziqdan asosgacha masofa 20, balandlikkacha bo'lgan masofa $2\sqrt{2}$ bo'lsa to'gri chiziqning konus ichidagi qismini uzunligini toping.

A) 4,5 B) 3,5 C) 9 D) 7

103. Muntazam 6 burchakli prizma eng katta diagonali 8 ga teng va u yon qirrasi bilan 30 gradusli burchak hosil qiladi. Prizma hajmini toping.

A) 72 B) 64 C) 60 D) 56

104. Asosi dioganallari 6 va 8 ga teng bo'lgan romb bo'lgan piramidaning balandligi 1 ga teng. Piramidaga ichki chizilgan shar radiusini toping.

A) $0{,}24$ B) 1 C) $0{,}48$ D) $\frac{1}{2}$

105. Konus yasovchisi k ga teng va u asos tekisligi bilan α burchak tashkil qilsa unga tashqi chizilgan shar hajmini toping.

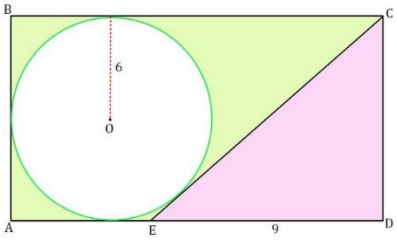
A) $\frac{4k\pi}{3sin^2\alpha}$ B) $\frac{4k^2\pi}{3sin^22\alpha}$ C) $\frac{k^3\pi}{6sin^3\alpha}$ D) $\frac{4k^3\pi}{3sin^22\alpha}$

106. Birinchi haltada 2 ta sariq 4 ta qizil shar bor. Ikkinchi haltada 3 ta sariq 6 ta qizil shar bor. Birinchi haltadan tavakkaliga bitta shar olib ikkinchi haltaga solindi. Ikkinchi haltadan olingan shar sariq bo'lish ehtimolini toping.

A) $\frac{1}{6}$ B) $\frac{1}{4}$ C) $\frac{1}{24}$ D) $\frac{1}{3}$

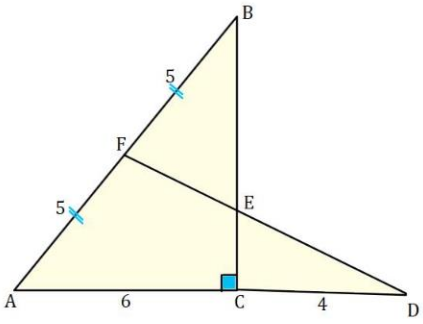
107. Rasmdagi to'g'ri to'rtburchakning yuzini toping.

A) 128 B) 180 D) 196 C) 216



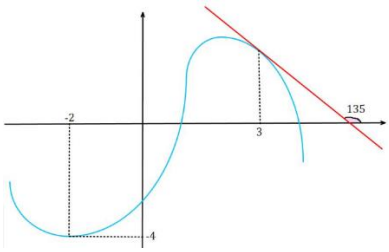
108. Rasmda berilgan ma’lumotlar asosida DF ning uzunligini toping.

A) $\sqrt{80}$ B) $\sqrt{65}$ C) $\sqrt{50}$ D) 7



109. $\int_{-2}^{3}(f''(x)+f''(x)\cdot f'(x))dx$ ni toping.

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

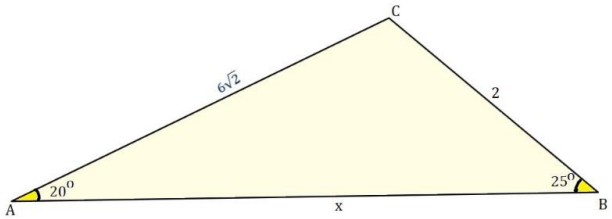


110. $\vec{a},\vec{b},\vec{c}$ vektorlar berilgan bo'lsin.
$|a|=2, \vec{a}\vec{b}=2$ va $\vec{a}=3\vec{b}+7\vec{c}$ bo'lsa,
$\vec{a}\vec{c}$ ni toping.

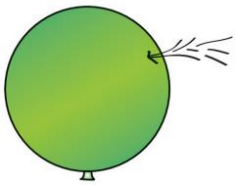
A) $\frac{2}{7}$ B) $-\frac{2}{7}$ C) $\frac{3}{8}$ D) $-\frac{3}{8}$

111. Rasmdagi ma'lumotlar asosida x ni toping.

A) $\sqrt{52}$ B) $\sqrt{60}$ C) 8 D) 10



112. Sferik sharsimon havo uning ustidagi teshikdan oqib chiqadi.

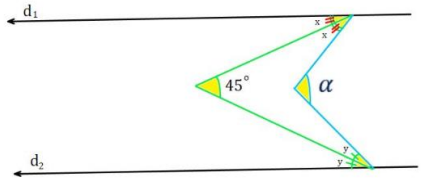


Sharning radiusi 6 sm bo'lsa, uning hajmining kamayish tezligi 24 cm^3/s ga teng. Radiusning kamayish tezligi qancha cm/s?

A) $\frac{1}{8\pi}$ B) $\frac{1}{6\pi}$ C) $\frac{1}{5\pi}$ D) $\frac{1}{4\pi}$

113. Agar $d_1 \parallel d_2$ bo'lsa, α burchakning qiymatini toping.

A) 45° B) 90° C) 135° D) 150°

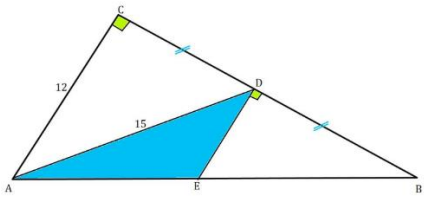


114. Asosi rombdan iborat bo'lgan piramidaning yon qirralari asos tekisligi bilan 60 gradusli burchak tashqil qiladi. Agar rombning tomoni 12 ga teng bo'lsa, piramidaning hajmini toping.

A) $144\sqrt{6}$ B) $216\sqrt{6}$ C) $288\sqrt{6}$ D) 288

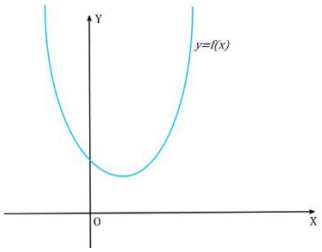
115. Bo'yalgan soxani yuzini toping.

A) 54 B) 27 C) 30 D) 24



116. $f(x) = ax^2 + bx + c$ kvadrat funsiya uchun quyidagilarning qaysi biri noto'g'ri?

A) $\frac{b}{a} > 0$ B) $b^2 < 4ac$ C) $\frac{a}{c} > 0$ D) $b < 0$



117. $\sqrt{3}\sin x + \cos x = 2$ tenglamani yeching.

A) $\frac{\pi}{2} + 2\pi n$ B) $\frac{\pi}{3} + 2\pi n$ C) $\frac{\pi}{4} + 2\pi n$ D) $\frac{\pi}{6} + 2\pi n$

118. $\text{EKUB}(a, b) = 6$ va $\frac{a+b}{a-b} = \frac{14}{9}$ bo'lsa, $a + b$ ni toping.

A) 144 B) 160 C) 168 D) 172

119. $f(x + y) = f(x) + f(y)$ va $f(3) = 2$ bo'lsa, $f(18)$ ni toping.

A) 12 B) 14 C) 16 D) 20

120. Agar $f(x) = x^2$ funksiya uchun,

$$\int_0^k f(x)dx + \int_0^{k^2} f^{-1}(x)dx = 64$$ o'rinli

bo'lsa, k ni toping.

A) 1 B) 2 C) 4 D) 8

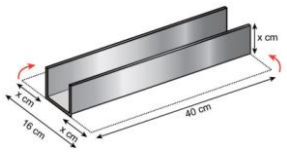
121. $P(x)$ ko'phad uchun,

$$P(3x+2) = x^2 + ax + 4$$

Tenglik o'rinli bo'lsa, $P(x+1)$ ko'phadni $x-4$ ga bo'lgandagi qoldiq 8 ga teng. a ni qiymatini toping.

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

122. Kengligi 16 cm va uzunligi 40 cm bo'lgan to'rtburchak shaklidagi alyuminiy metall quyida ko'rsatilganidek, chetlaridan x cm balandlikdagi ochiq truba hosil qiladi.



Shunga ko'ra, x ning qaysi qiymati uchun trubadan o'tadigan suv miqdori maksimal bo'ladi? (Metalning qalinligi e'tiborga olinmaydi.)

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

123. $\log_3(9+9^x) = x + \log_3(28 - 2\cdot 3^x)$ tenglamani ildizlari yig'indisini toping.

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

124. $y = \frac{x^2-16x+14}{x^2-18x+32}$ funksiyaning barcha boshlang'ich funksiyalarini toping.

A) $F(x) = 1 + \ln(x^2 - 18x + 32) + C$
B) $F(x) = x + \ln(x^2 - 18x + 32) + C$
C) $F(x) = x - \ln(x^2 - 18x + 32) + C$
D) $F(x) = x - \ln\frac{x-2}{x-16} + C$

125. $y = x^3, y = 0$ va $y = 1$ chiziqlar bilan chegaralangan soxani Ox o'qi atrofida aylantirishdan hozil bo'lgan jism hajmini toping?

A) $\frac{6}{7}$ B) $\frac{5}{7}$ C) $\frac{6\pi}{7}$ D) $\frac{5\pi}{7}$

126. Parallelopipedni o'lchamlari 8,12,15 ga teng bo'lsa to'la sirtini toping.

A) 396 B) 486 C) 596 D) 792

127. Agar $f^{-1}(3x-1)=6x+1, f(g(-2))=2m+1$ va $g(x)=4x+1$ bo'lsa, m ni toping?

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

128. Agar $f(x)=mx+2$ va $g(x)=4x+m$ uchun $g^{-1}(f(2))=3$ bo'lsa, m ni toping

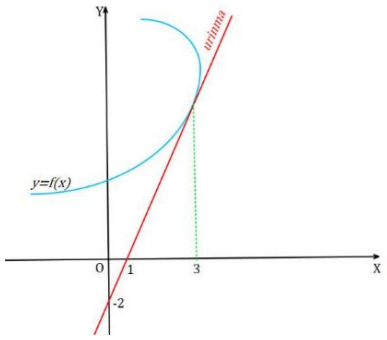
A) -7 B) 5 C) 8 D) 10

129. $\frac{(5\sqrt{3}+\sqrt{50})(5-\sqrt{24})}{\sqrt{75}-5\sqrt{2}}$ ni hisoblang.

A) 1 B) -1 C) 0 D) 5

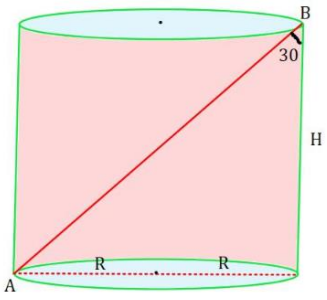
130. Agar $g(x)=x\cdot f^2(x)$ bo'lsa, $g'(3)$ni toping

A) 54 B) 60 C) 48 D) 64



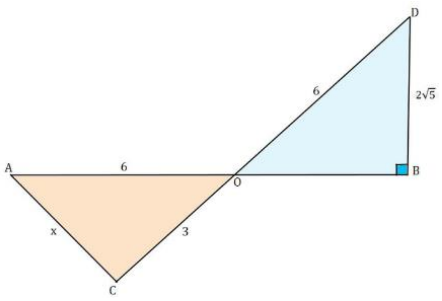
131. Slindrning balandligi 6 ga teng bo'lsa, asosini radiusini toping?

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



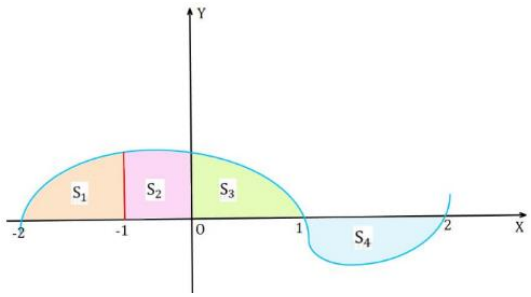
132. x ning qiymatini toping.

A) 7 B) $\sqrt{21}$ C) $\sqrt{34}$ D) 5



133. Agar $S_1 = 6, S_3 = 5$ va $S_4 = 1$ bo'lsa, $\int_0^2 xf(x^2-2)dx = 9$ bo'lsa, S_2 ni toping.

A) 7 B) 8 C) 9 D) 10



134. $f(x) = \frac{\sqrt{x}+1}{\sqrt{x}-1}$ bo'lsa, $f'(4)$ni toping.

A) 1 B) 0 C) $-\frac{1}{2}$ D) $-\frac{1}{3}$

135. $\left(\frac{1}{5}\right)^{\frac{x^2+8}{x^2-4}} > 25$ tengsizlikni butun yechimlari nechta?

A) 1 B) 2 C) 3 D) cheksiz ko'p

136. Nechta 4 xonali sonda 2 ham, 3 ham ishtirok etmaydi?

A) 3584 B) 3796 C) 4024 D) 4096

137. 6^{100} ni oxirgi 2 ta raqamini toping?

A) 56 B) 36 C) 96 D) 16

138. $M(4;-1), N(-2;3), P(x;y), Q(5;7)$ nuqatalar uchun $\overrightarrow{MN} = 4\overrightarrow{PQ}$ bo'lsa, $P(x;y)$ ni toping?

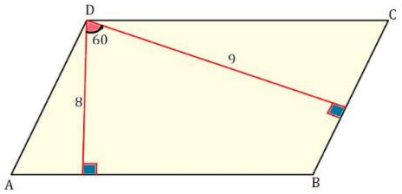
A) (4,5;3,5) B) (6;4) C) (6,5; 3) D) (6,5;6)

139. $\vec{a}(1;1)$ va $\vec{b}(-1;1)$ vektotlar berilgan. $2\vec{c}+\vec{d}=\vec{a}$ va $\vec{c}+2\vec{d}=\vec{b}$ tengliklar o'rinli bo'lsa, $\vec{c}$ va $\vec{d}$ vektorlar orasidagi burchak kosinusini toping.

A) $-0{,}8$ B) $0{,}6$ C) $-\frac{2}{3}$ D) $-0{,}6$

140. Parallelogrammning yuzini toping.

A) $60\sqrt{3}$ B) $48\sqrt{3}$ C) $40\sqrt{3}$ D) $36\sqrt{3}$



141. Kesik muntazam to'rtburchakli piramidaning asos yuzalari nisbati 25:9 va balandligi 3 ga teng. Hajmi 147 ga teng bo'lsa, yon sirtini yuzini toping.

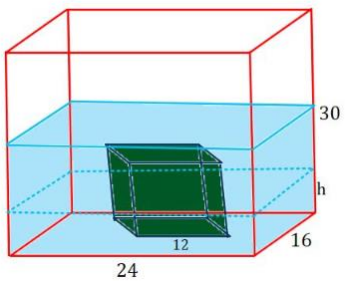
A) 144 B) 120 C) 96 D) 72

142. $\cos x\cos 2x=\cos 3x$ tenglamani $[0;180°]$ oraliqdagi yechimlari yig'indisini toping.

A) $\frac{3\pi}{2}$ B) π C) $\frac{5\pi}{2}$ D) $\frac{\pi}{2}$

143. Tomoni 12 ga teng bo'lgan kub ozgina suvi bor parallelopipedga solindi. Shunda suv parallelopiped yarmigacha ko'tarildi. Dastlabki suv balandligini toping.

A) 10 B) 10,5 C) 11 D) 11,5



144. $y'=\sqrt{y}$ differensial tenglamani yeching. Bunda $y(1)=4$ bo'lsa, y ni toping.

A) $y=\frac{(x+3)^2}{4}$ B) $y=\frac{(x-3)^2}{4}$
C) $y=\frac{(x+3)^2}{2}$ D) $y=x-3$

145. $\frac{\sin 3a}{\sin a}+\frac{\cos 3a}{\cos a}=-1$ bo'lsa,
$\cos^6 a-\sin^4 a\cdot\cos^2 a+2\sin^2 a\cdot\cos^2 a$
ifodaning qiymatini toping.

A) $\frac{1}{4}$ B) $\frac{1}{5}$ C) $\frac{1}{3}$ D) $\frac{3}{8}$

146. Agar $f(a)-f(b)=4$ va $\int_a^b f(x)f'(x)dx=16$ bo'lsa, $f(a)f(b)$ ni toping.

A) 4 B) 8 C) 12 D) 16

147. Teng yonli trapetsiyaning asoslari 9 va 21 ga , balandligi 8 ga teng bo'lsa, trapetsiyaga tashqi chizilgan aylana radiusini toping.

A) $\frac{63}{8}$ B) 8 C) $\frac{85}{8}$ D) 10

148. Ixtisoslashgan kasalxonga 50% bemor K kasallik bilan, 30% bemor L kasallik bilan, 20% bemor M kasallik bilan keladi. K kasallikdan tuzalish ehtimoli 0.7 , L kasallikdan tuzalish 0.8 va M dan tuzlish 0.9 ehtimollikda. Kasalxonaga bemor kelib butunlay sog'ayib ketti shu bemorni K kasallik bilan kelganlik ehtimolligini toping?

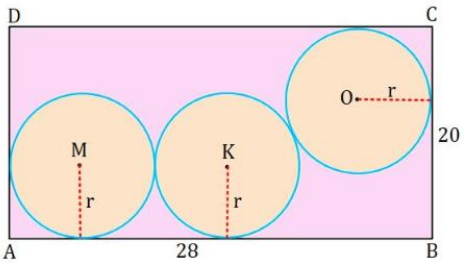
A) $\frac{3}{11}$ B) $\frac{5}{11}$ C) $\frac{7}{11}$ D) $\frac{9}{11}$

149. Yuk va yengil mashinalar sonini nisbati 3:2 ga teng. Yuk mashinaning benzin quyish ehtimoli 0,1ga, yengil mashinaning benzin quyish ehtimoli 0,2 ga teng. Shahobchaga mashina benzin quygani kirgan bo'lsa, uning yuk mashina bo'lish ehtimolini toping.

A) $\frac{4}{7}$ B) $\frac{9}{14}$ C) $\frac{3}{7}$ D) $\frac{5}{14}$

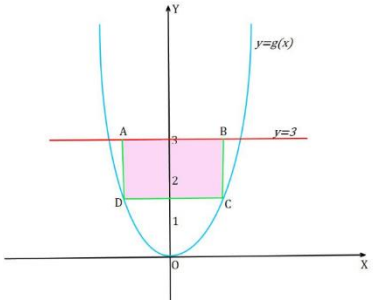
150. Aylana radiusi r ni toping.

A) 4 B) 7 C) $\frac{19-\sqrt{65}}{2}$ D) $\frac{19+\sqrt{65}}{2}$



151. $g(x) = x^2$ bo'lsa, ABCD to' g′ri to'rtburchak yuzini eng katta qiymatini toping.

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



152. 5 va 1 sonlari orasiga arifmetik progressiya tashkil etuvchi sonlar joylashtirilgan bo'lib ularning yig'indisi 33 ga teng bo'lsa, bu sonlar orasida nechta had bor?

A) 9 B) 10 C) 11 D) 12

153. O'quvchi formula kitobchasidan o'ziga kerakli formulani qidirmoqda. 3 ta kitobchadan birinchisida bo'lish ehtimoli 0,6 ga, ikkinchisida bo'lish ehtimoli $0{,}7$ga, uchinchisida bo'lish ehtimoli 0,8 ga teng bo'lsa, eng kamida ikki kitobchada formulaning bo'lish ehtimolini toping.

A) 0,432 B) 0.336 C) 0,768 D) 0,096

154. Teng yonli trapetsiya yon tomoni 7 ga, dioganali 8 ga, o'rta chizig'i 4 ga teng bo'lsa, kichik asosini toping.

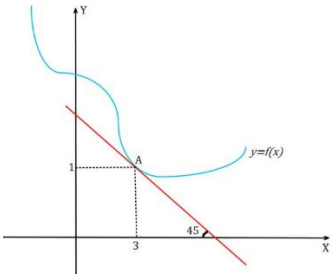
A) 2 B) 3 C) 4 D) 5

155. Slindr ikki asos yuzalari yig'indisi yon sirti yuziga teng. Uning hajmi 64π ga teng bo'lsa, uni balandligini toping.

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

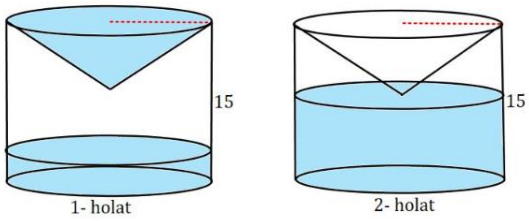
156. Shaklda l_1 to'g'ri chiziq $y = f(x)$ funksiyaga urinadi. $g(x) = \frac{f(x)}{x+1}$ bo ′ lsa, $g(x)$ funksiyaga $x = 3$ nuqtada o'tkazilgan urinmaning burchak koeffisiyenti nechaga teng?

A) $-\frac{5}{16}$ B) $-\frac{1}{4}$ C) $-\frac{3}{16}$ D) $-\frac{1}{8}$



157. Konusdagi suv hajmi slindrdagi suv hajmiga teng. Suv tomchilab tushib bo'lgach 2-holat yuzaga keldi. Konus balandligini toping.

A) 7 B) 8 C) 9 D) 10



158. $2^{15761} - 1$ ni 25 ga bo'lgandagi qoldiqni toping.

A) 0 B) 1 C) 10 D) 12

159. Silindr o'qiga parallel bo'lgan tekislik asosdagi aylanadan $120°$ ga teng yoy ajratadi. Shu tekislik o'qdan h masofada joylashgan. Hosil bo'lgan kesimning dioganali $2\sqrt{7}h$ ga teng. Silindr to'la sirtini toping.

A) $16\pi h^3$ B) $18\pi h^3$ C) $16\sqrt{7}\pi h^3$ D) $17\pi h^3$

160. Sotuvchi 100 ta tuxumni 400 so'mdan olib ustiga 25 foiz qo'yib sotmoqchi bo'ldi. Lekin qarasa tuxumlarni ayrimlari singan ekan. Shunda u sinmaganini ustiga 30 foiz singanini ustiga 10 foiz qo'yib sotib ko'zlagan foydasiga erishdi. Nechta singan tuxum bor edi?

A) 18 B) 22 C) 25 D) 30

161. Agar $\sin a \cdot \cos a \cdot \left(\frac{1}{2} - \sin^2 a\right) = \frac{1}{16}$ tenglik o'rinli bo'lsa $sin4a$ ni toping.

A) $\frac{1}{2}$ B) $\frac{1}{3}$ C) $\frac{1}{4}$ D) $\frac{1}{6}$

162. Slindrning balandligi 8 ga teng. Asos radiusi 5 ga teng. Slindrning o'q kesimiga parallel kesim shunday o'tkazilganki, kvadrat hosil bo'lgan. Hosil bo'lgan kesim dioganalidan o'q kesimgacha bo'lgan masofani toping.

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

163. $2^{70}+3^{70}$ ni 13 ga bo'lgandagi qoldiqni toping?

A) 0 B) 7 C) 10 D) 12

164. x, y tub sonlar uchun,

$$\text{EKUK}(x,y)=84 \text{ va } \frac{36}{y}+x=10$$

bo'lsa, $x+y$ ni toping.

A) 19 B) 20 C) 21 D) 22

165. $f(x)=\frac{x-2}{\sin^2 x}$ bo'lsa, $f'\left(\frac{\pi}{2}\right)$ ni toping.

A) $\frac{\pi}{2}$ B) $\frac{1}{2}$ C) 1 D) 0

166. Arifmetik progressiyada 6-hadi 3-hadidan 2 marta katta. 1-hadini arifmetik progressiya ayirmasiga nisbatini toping.

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

167. Balandligi 3 sm , asos radiusi 5 sm bo'lgan slindrik konserva qutisini yasash uchun qancha tunika kerak. ($\pi \approx 3$ deb hisoblang)

A) 120 B) 156 C) 200 D) 240

168. $\log\frac{3}{4}+\log\frac{4}{5}+\log\frac{5}{6}+\cdots+\log\left(\frac{n}{n+1}\right)=-1$ Tenglik o'rinli bo'lsa, n ning qiymatini toping.

A) 29 B) 24 C) 18 D) 12

169. $\frac{x^2(x+2)^2}{\log_{0,5}(x^2+1)} \geq 0$ tengsizlikni butun yechimlari sonini toping.

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

170. Uchburchak uchidan boshlab hisoblaganda yon tomonini 3:5:7 nisbatda bo'luvchi, asosga parallel kesmalar uchburchak yuzini qanday nisbatda bo'ladi.

A) 9:25:49 B) 9: 56:149 C) 9:55:161 D) 9:49:144

171. $y = \log_2 x$ va $y = \frac{x}{2}$ funksiyalar bilan chegaralangan soxani yuzini toping.

A) $3 - 2log_2 e$ B) $3 + 2log_2 e$ C) 3 D) 2

172. $\cos^2 x - 8\cos x - 9 = 0$ tenglama $[-\pi; 2\pi]$ kesmada nechta ildizga ega?

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

173. 12 ta oq va 13 ta qizil atirguldan 2 ta oq va 3 ta qizil atirgulni necha xil usulda tanlash mumkin?

A) 19276 B) 18876 C) 18786 D) 19876

174. (a_n) arifmetik progressiyaning dastlabgi 10 ta hadining yig'indisi 140 ga teng va $a_{10} - a_1 = 24$ tenglik o'rinli bo'lsa, $a_9 + a_{11}$ ni toping.

A) 46 B) 48 C) 50 D) 52

175. Arifmetik progressiyada $S_n = 5n^2$ bo'lsa, 15-hadini toping.

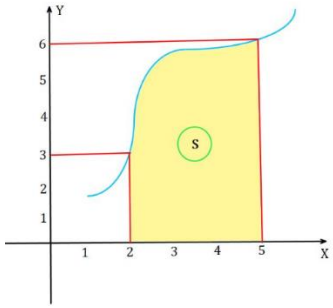
A) 150 B) 148 B) 145 D) 140

176. Agar o'suvchi geometrik progressiya hadlari uchun $b_1 + b_4 = 27$ va $b_2 + b_3 = 18$ bo'lsa, uning maxrajini toping.

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

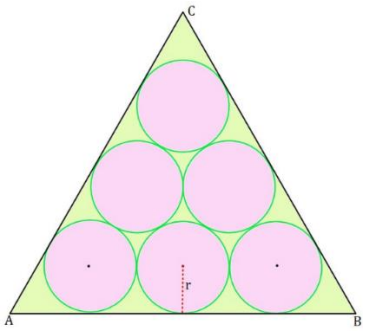
177. $\int_2^5 xf'(x)dx = 10$ bo'lsa, S ni toping.

A) 2 B) 10 C) 12 D) 14



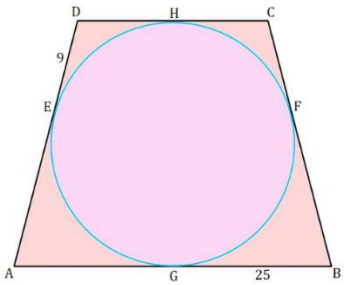
178. Muntazam uchburchak ichiga chizilgan aylanalar radusi $r = 3$ bo'lsa, bo'yalgan soxani yuzini toping. ($\pi \approx 3$ deb oling)

A) 12 B) $36\sqrt{3} - 99$ C) $36\sqrt{3} + 99$ D) 9



179. Teng yonli trapetsiyada $\mathrm{ED} = 9$, $\mathrm{GB} = 25$ ga teng bo'lsa, uning yuzini toping.

A) 1024 B) 900 C) 1020 D) 1440



180. $b_1; b_2; b_3; b_4$ geometrik progresssiya hadlari. $b_1 + 1; b_2 + 1; b_3 + 4; b_4 + 13$ arifmetik progressiya hadlari bo'lsa, geometrik progresssiyaning maxrajini toping.

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

181. x musbat butun son uchun, $EKUB(x, 2x + 7) = x$ tenglik o'rinli. x soni qancha turli qiymatlarni qabul qilishi mumkin?

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

182. Bu yerda a va b natural sonlar, $4a = 7b = 2c$ va $EKUB(a, b, c) = 3$. Agar shunday bo'lsa, $a + b + c$ yig'indisi nechaga teng?

A) 78 B) 75 C) 72 D) 64

183. Bu erda x va y natural sonlar, $EKUB(x, y) = 5$ va $16 \cdot EKUK(x, y) = 63 \cdot (x + y)$, $x + y$ yig'indisi nechaga teng?

A) 65 B) 80 C) 95 D) 105

184. a va b ikki xil natural sonlar. $a + b = 216$ va $EKUB(a, b) = 18$, Quyidagilardan qaysi biri $a - b$ farqi bo'lishi mumkin?

A) 18 B) 156 C) 54 D) 36

185. x va y ketma-ket toq natural sonlardir.

$$8(x + y) = EKUK(x, y) + 1$$

$x + y$ yig'indisi nechaga teng?

A) 28 B) 36 C) 32 D) 40

186. a va b musbat butun sonlardir.

$$96 \cdot a^2 = b^3$$

a+b yig'indisi qabul qilishi mumkin bo'lgan eng kichik qiymat nima?

A) 13 B) 14 C) 18 D) 36

187. Ifodaning qiymatini toping.

$$|1-2013^2|\cdot\left(\left|\frac{1}{2013}-\frac{1}{2014}\right|+\left|\frac{1}{2013}-\frac{1}{2012}\right|\right)$$

A) $\frac{1}{4}$ B) $\frac{1}{2}$ C) 1 D) 2

188. Ifodaning qiymatini toping.

$$\frac{\left(-\frac{2}{3}\right)^{20}\cdot\left(\frac{9}{4}\right)^{10}}{(-8^{-1})^{-3}\cdot\left(-\frac{8}{27}\right)^{-3}}$$

A) 3^{-6} B) 3^{-7} C) 3^{-8} D) 3^{-9}

189. Agar $2^{a+b+c}=2^{a+b}+2^{a+c}+2^{b+c}$ tenglik o'rinli bo'lsa, $2^{-a}+2^{-b}+2^{-c}$ ifodaning qiymatini toping.

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

190. Ifodaning qiymatini toping.

$$\frac{\sqrt{80}-4}{\sqrt{35}+\sqrt{3}-\sqrt{7}-\sqrt{15}}$$

A) $\sqrt{7}+\sqrt{3}$ B) $2\sqrt{7}$ C) $2\sqrt{3}$ D) $\sqrt{7}$

191. Ifodaning qiymatini toping.

$$\frac{\sqrt{\sqrt{5}+2}+\sqrt{\sqrt{5}-2}}{\sqrt{\sqrt{5}+1}}-\sqrt{3-2\sqrt{2}}$$

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

192. Ifodaning qiymatini toping.

$$\sqrt{\sqrt[3]{9}+6}-\sqrt{\sqrt[3]{9}-\sqrt[3]{3}+1}$$

A) -1 B) 0 C) $\sqrt{\sqrt[3]{3}+1}$ D) $\sqrt{\sqrt[3]{3}-1}$

193. $12^{1231} + 14^{4324}$ ifodani 13 ga bo'lgandagi qoldiqni toping?

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

194. 208^{208} ni 17 ga bo'lgandagi qoldiqni toping.

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

195. 4^{100} ni oxirgi 2 ta raqamini toping.

A) 16 B) 56 C) 76 D) 96

196. $5^{20} + 7^{20}$ ni 12 ga bo'lgandagi qoldiqni toping.

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

197. $15^{60} + 20^{30}$ ni 13 ga bo'lgandagi qoldiqni toping.

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

198. $5^{18} \cdot 15^{4} \cdot 2^{22}$ necha xonali son?

A) 18 B) 21 C) 23 D) 24

199. Ifodani soddalashtiring.

$$\frac{x^2+y^2+2xy+2x+2y+1}{y^2+xy+y} \cdot \frac{x^2+xy-x}{x^2+y^2+2xy-1}$$

A) 1 B) x C) y D) $\frac{x}{y}$

200. Ifodani soddalashtiring.

$$\frac{x-2-\frac{3}{x}}{x-3-\frac{4}{x}} \cdot \frac{\frac{1}{x}-\frac{4}{x^2}}{\frac{1}{x}-\frac{9}{x^3}}$$

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

201. Ifodani soddalashtiring.

$$\left(\frac{2^x}{1+2^{x-y}}-\frac{2^y}{1-2^{y-x}}\right):\left(\frac{1}{2^x+2^y}-\frac{1}{2^x-2^y}\right)$$

A) 2^x B) 2^y C) 2^{x+y} D) 2^{x-y}

202. Ifodani soddalashtiring.

$$\frac{a\sqrt{a}-1}{a+\sqrt{a}+1}:\frac{a-1}{\sqrt{a}}$$

A) $\sqrt{a}+1$ B) $\sqrt{a}$ C) $\sqrt{a}-1$ D) $\frac{\sqrt{a}}{\sqrt{a}+1}$

203. Ifodani soddalashtiring.

$$\frac{a-1}{\left(1+\frac{1}{\sqrt[3]{a}}+\frac{1}{\sqrt[3]{a^2}}\right)\cdot\left(1-\frac{1}{\sqrt[3]{a}}\right)}$$

A) 1 B) a C) a^2 D) a^3

204. Agar $\frac{ax^2+bxy+cy^2}{2x^2+xy-y^2}:\frac{x^2-4xy+3y^2}{x^2-y^2}=\frac{x-2y}{x-3y}$ tenglik o'rinli bo'lsa, a + b + c yig'indini qiymatini toping.

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

205. $x^2-(\sqrt{2}-1)x-\sqrt{2}=0$ tenglamaning ildizlari x_1 va x_2 dir. Bunga ko'ra, $x_1^3+x_2^3$ ifodaning qiymatini toping?

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

206. $x^2-(2a+2)x+9=0$ tenglamaning ildizlari x_1 va x_2 dir. $\frac{1}{\sqrt{x_1}}+\frac{1}{\sqrt{x_2}}=2$ tenglik o'rinli bo'lsa, a ning qiymatini toping.

A) 15 B) 14 C) 13 D) 12

207. $\left(x+\frac{1}{x}\right)^2-8\left(x+\frac{1}{x}\right)+16=0$ tenglamaning ildizlaridan biri x_1 bo'lsa, ${x_1}^2+\frac{1}{{x_1}^2}$ ifodaning qiymati nimaga teng?

A) 11 B) 12 C) 13 D) 14

208. Tenglamaning ildizlari ko'paytmasini toping.

$$\frac{x+3}{2x-1}+\frac{12x-6}{x+3}=5$$

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

209. Tenglamaning ildizlari ko'paytmasi, ildizlari yig'indisidan qanchaga ko'p?

$$x^2-4x-|2x-4|+5=0$$

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

210. Tenglamaning ildizlari yig'indisini toping.

$$x^2-x-\sqrt{x^2-x-1}=1$$

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

211. $\frac{(x+2)^{2010}\cdot(x^2-x-2)}{(1-x)^{2011}} \le 0$ tengsizlikning yechimlari to'plamining eng katta manfiy butun qiymatini toping.

A) -5 B) -4 C) -1 D) -2

212. $\frac{1-\sqrt{2-x}}{1+\sqrt{5-x}} \le 0$ tengsizlikni yeching.

A) $(1,2)$ B) $(-\infty,1]$ C) $(1,5)$ D) $(-\infty,2]$

213. $x^2-(m+3)x-5=0$ tenglamaning ildizlari x_1 va x_2 dir.

$$\sqrt{x_1^2+2x_1\cdot x_2+x_2^2} \le 4$$

bo'lsa, m ning barcha butun qiymatlari yig'indisini toping.

A) -32 B) -27 C) -24 D) -21

214. Tengsizlikni yeching.

$$\log_{(x+3)} 2-\frac{1}{2}\cdot\log_{\sqrt{x+3}} 2=0$$

A) $(-3,\infty)/\{-2\}$ B) $\{-1,0,1\}$ C) R D) $\emptyset$

215. Tenglamaning musbat ildizini toping.

$$(x+1)^{1+\log(x+1)}=10(x+1)$$

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

216. Tengsizlikni yeching.

$$\log_{\frac{1}{2}}(x+2)\cdot\log_3(5-x)\le 0$$

A) $(-2,5)$ B) $[-1,4]$
C) $(-\infty,4]$ D) $(-\infty,-1]\cup[4,\infty)$

217. 15 dona yangi o‘rik 750 gramm, 20 dona quritilgan o‘rik esa 600 gramm. Kilogrami x so’mga sotib olingan yangi o'rik miqdori quritilganda 4 kilogramm yengillashadi va bir kilogramm quritilgan o'rik $2x$ so’mga sotiladi va 12 so’m foyda keltiradi. Shunga ko'ra, boshida yangi o'rik uchun jami necha so’m to'langan?

A) 40 B) 50 C) 56 D) 60

218. Barcha o‘quvchilar sinov imtihonlarini topshirgan xususiy ta’lim muassasasida o‘tkazilgan ikkinchi sinov imtihonida birinchi imtihonga nisbatan 40 nafar o‘quvchining to‘plagan ballari 10 ga, 60 nafar o‘quvchining balli 6 ga oshgan, 30 nafar o‘quvchining balli 4 ga kamaygan. .
Boshqa talabalarning ballari o‘zgarmasa va 2-imtihonning o‘rtacha balli 1-imtihondagi o‘rtacha balldan 2 ball ko‘p bo‘lsa, ushbu xususiy o‘quv yurtida jami nechta talaba bor?

A) 300 B) 320 C) 340 D) 360

219. 24 kishi ishtirok etgan birinchi matematika imtihonida imtihon topshirgan o‘quvchilarning o‘rtacha balli 54 ni tashkil etdi. Ikkinchi imtihonda birinchi imtihonga nisbatan 8 nafar o‘quvchilarning to‘plagan ballari 4 ga, 5 nafarining balli 8 ga oshdi, qolganlarining balli o‘zgarmadi. Shunga ko'ra, ikkinchi imtihonning o'rtacha balli qancha?

A) 55 B) 56 C) 57 D) 58

220. Sabzavot sotuvchisi qo‘lidagi tarvuzning 3/8 qismini kuniga 5 dona, qolgan 6 dona tarvuzni 43 kunda sotadi. Shunga ko‘ra, ko‘kat sotuvchida jami nechta tarvuz bor?

A) 120 B) 240 C) 200 D) 360

221. 15, 16, 17, 18 va 19 yoshli besh kishining ishni bajarish vaqti ularning yoshiga teskari proportsionaldir. Agar bu besh ishchi birgalikda bu ishni 6 soatda tugatsa, 15 yoshli ishchi bir o‘zi bu ishni necha soatda tugatadi?

A) 30 B) 32 C) 34 D) 36

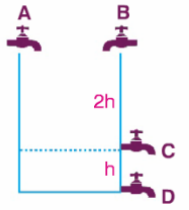
222. Farxodning ish tezligi Olimning ish tezligining 3 barobari va Kamronning ish tezligining yarmi. Farxod va Kamron birga ishlay boshlaydi va 3 kun ishlagandan so'ng Kamron ishdan ketadi va uning o'rnida Olimni davom etadi. Agar butun ish 19 kunda bajarilsa, Kamron va Olim butun ishni birga necha kunda tugatadilar?

A) 8 B) 10 C) 13 D) 15

223. Ikki krandan biri hovuzni 10 soatda, ikkinchisi 20 soatda, uchinchisi esa 30 soatda butun hovuzni to‘ldiradi.Ushbu uchta jo'mrak birgalikda ochilganda, hovuzni 8 soat ichida to'ldirish uchun drenaj kranini hovuz balandligining necha qismiga o'rnatish kerak?

A) 3/10 B) 1/5 C) 3/5 D) 7/10

224. A va B kranlari mos ravishda 4 va 6 soat ichida tankni to'ldiradi va C va D kranlari mos ravishda 8 va 12 soat ichida to'liq tankni o'z darajalariga tushiradi.



D krani rezervuarning pastki qismida joylashganligi va C krani tank balandligining 1/3 qismini tashkil etganligi sababli, idish bo'sh bo'lganda to'rtta kran bir vaqtning o'zida ochilgan bo'lsa, uni to'ldirish uchun qancha vaqt kerak bo'ladi?

A) 11 B) 11/2 C) 11/3 D) 11/4

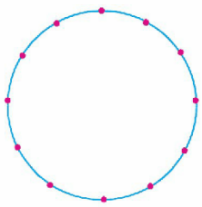
225. Talabadan 18 ta savoldan 12 tasiga javob berish so'ralgan. Dastlabki 6 ta savoldan ko‘pi bilan 2 tasiga va oxirgi 6 ta savoldan kamida 5 tasiga javob berilishi kerak bo‘lganligi sababli, nechta variantni tanlash mumkin?

A) 101 B) 543 C) 689 D) 838

226. Yotoqxonada ikkita 3 kishilik va bitta 2 kishilik xona mavjud. Akbar va Ali bir xonada qolmasligi sharti bilan, 8 kishi, jumladan, Akbar va Ali bu yotoqxonaga necha xil usulda joylashishi mumkin?

A) 360 B) 380 C) 420 D) 432

227. Quyida aylanada bir xil masofada joylashgan 12 ta nuqta bor.



Shunga ko'ra, rasmdagi istalgan uchta nuqtani burchak sifatida qabul qiladigan nechta to'g'ri burchakli uchburchak chizish mumkin?

A) 10 B) 18 C) 30 D) 60

228. Berilgan qatorning:

$$13,11,17,14,18,21,21,x,25,26$$

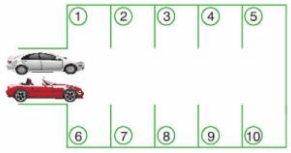
Medianasi 19 bo’lsa, x ning qiymatini toping.

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

229. 3 ta quyon va 4 ta mushuk tasodifiy yonma-yon tizilgan.Shunga ko'ra, har qanday 2 ta mushukning birga kelmaslik ehtimoli qanday?

A) 1/35 B) 2/35 C) 3/35 D) 1/7

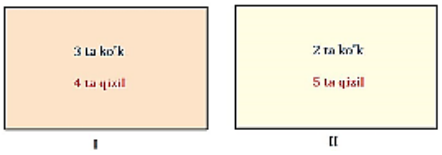
230. 10 ta to'xtash joyiga ega avtoturargohning rejasi quyida keltirilgan.



Ushbu bo'sh avtoturargohdagi raqamlangan to'xtash joylariga ikkita transport vositasi qo'yiladi. Avtotransport vositalari asosiy raqamlangan to'xtash joylarida yonma-yon turishi ehtimoli qanday?

A) 2/15 B) 1/5 C) 1/2 D) 3/5

231. Quyidagi rasmda I va II qutidagi sharlarning raqamlari va ranglari ko'rsatilgan.



Shunga ko'ra, tasodifiy quti tanlansa va olingan shar qizil ekanligini bilib, qutidan olingan sharning I qutidan olingan bo'lish ehtimoli qanday?

A) 2/9 B) 4/9 C) 5/9 D) 2/3

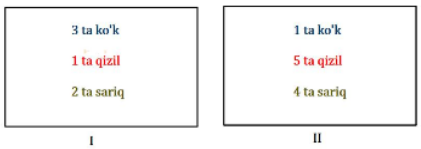
232. Bir sumkada 3 ta qizil, 4 ta sariq va 5 ta oq shar bor. Shunga ko'ra, ketma-ket tasodifiy chizilgan uchta sharning kamida ikkitasi bir xil rangda bo'lish ehtimoli qanday bo'ladi?

A) 3/11 B) 5/11 C) 8/11 D) 7/11

233. 4 erkak va 4 ayol bo'lgan 8 kishining barchasi tasodifiy Toshkent yoki Samarqandga yuboriladi. Shunga ko'ra, ikki erkakning ikkala shaharga borishi ehtimoli qanday?

A) 3/8 B) 7/16 C) 1/2 D) 5/8

234. I va II qutidagi sharlarning raqamlari va ranglari ko'rsatilgan. Dastlab I qutidan II gacha 1 tasodifiy to'p va keyin II qutidan I ga tasodifiy 2 ta shar tashlanadi.



Shunga ko'ra, oxirgi holatda qutilardagi sariq sharlar soni bir-biridan farq qilish ehtimoli qanday?

A) 1/11 B) 3/5 C) 1/8 D) 1/6

235. Agar

$$f(x)=\left(207-\frac{x^3}{3}\right)^2-\left(207+\frac{x^3}{3}\right)^2$$

Bo'lsa, $f'\left(-\frac{1}{3}\right)$ ni toping.

A) -92 B) -46 C) 23 D) 46

236. $f(x)$ darajali funksiya,

$$f(x)+f'(x)=3x^2+bx+c$$

Bo'lsa, $f''(2)$ ifodaning qiymatini toping.

A) 1 B) 2 C) 4 D) 6

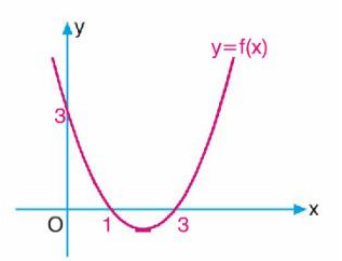
237. $f: R \to R$ funksiya berilgan,

$$f(x)=x^3+2x^2+2x+5$$

bo'lsa, $(f^{-1})'(1)$ ni toping.

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

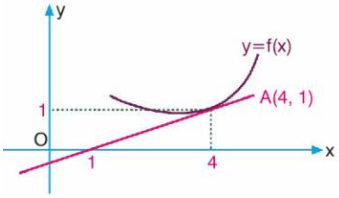
238. Chizmada Ox o'qini $(1,0)$ va $(3,0)$ nuqtalarda, Oy o'qini esa $(0,3)$ nuqtada kesib o'tuvchi $y=f(x)$ parobola tasvirlangan.



Bunga ko'ra, $f'(2)+f'(0)$ ifodaning qiymatini toping.

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

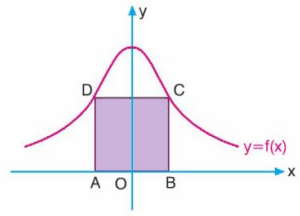
239. Chizmada $y=f(x)$ funksiya grafigining $A(4,1)$ nuqtasida urinuvchi va Ox o'qini $(1,0)$ nuqtada kesib o'tuvchi to'g'ri chiziq tasvirlangan.



$g(x)=f(x\cdot f(x))$ bo'lsa, $g(x)$ funksiyaning $x=4$ nuqtasiga o'tkazilgan urinmaning burchak koeffitsientini toping.

A) $\frac{1}{9}$ B) $\frac{2}{9}$ C) $\frac{5}{9}$ D) $\frac{7}{9}$

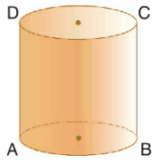
240. Chizmada $f(x)=\frac{a}{1+x^2}$ funksiyaning grafigi va $ABCD$ to'g'ri to'rtburchak tasvirlangan.



ABCD to'g'ri to'rtburchakning yuzining eng katta qiymati 8 ga teng bo'lsa, a ni toping.

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

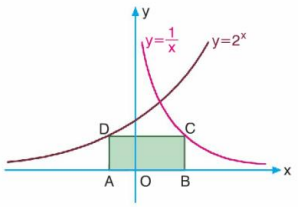
241. Slindrning to'la sirti 12π ga teng.



Slindirning hajmi eng katta bo'lishi uchun, asosining yuzi qanday bo'lishi kerak?

A) π B) 2π C) 3π D) 4π

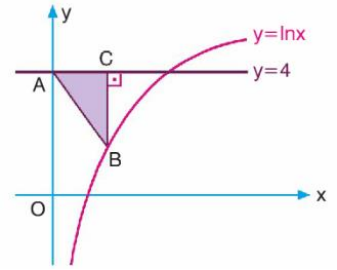
242. Chizmada $y = 2^x$ va $y = \frac{1}{x}$ funksiyalarning grafiklari va $ABCD$ to'g'ri to'rtburchsk tasvirlangan



ABCD to'g'ri to'rtburchak yuzi eng katta bo'lsa, C nuqtaning ordinatasini toping.

A) $\frac{2}{e}$ B) $\frac{1}{e}$ C) $\frac{e}{2}$ D) $\frac{e}{\ln 2}$

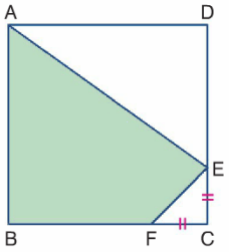
243. Quyidagi chizmada $y = \ln x$ egri chiziq va $y = 4$ to'g'ri chiziq grafigi tasvirlangan.



ABC to'g'ri burchakli uchburchakning yuzining eng katta qiymatini toping.

A) e B) e^2 C) e^3 D) $\frac{e^3}{2}$

244. $ABCD$ kvadrat, $|AB| = 2$ cm va $|EC| = |FC|$.



AEFB to'rtburchakning yuzining eng katta qiymati necha cm^2 dir?

A) 2 B) $\frac{12}{5}$ C) $\frac{5}{2}$ D) 3

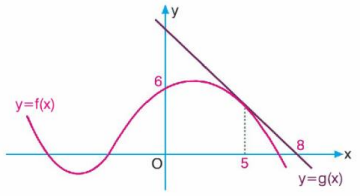
245. Integralning qiymatini toping.

$$\int \frac{dx}{2 + 2\cos x}$$

A) $\tan\frac{x}{2} + c$ B) $\frac{1}{2}\tan\frac{x}{2} + c$

C) $\tan x + c$ D) $\frac{1}{2}\tan x + c$

246. Quyidagi chizmada $y = f(x)$ funksiya grafigi va uning $x = 5$ nuqtasidan o'tkazilgan urinmaning burchak koeffitsienti -1 ga teng.

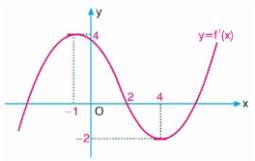


$$\int_0^{\frac{5}{2}} \frac{2 \cdot f'(2x)}{f(2x) + 3} dx$$

Integralning qiymatini toping.

A) $\ln\frac{3}{5}$ B) $\ln\frac{5}{6}$ C) $\ln\frac{2}{3}$ D) 1

247. Chizmada $y = f(x)$ funksiyaning grafigi tasvirlangan.



Bunga ko'ra, $\int_{-1}^{4}[f''(x) + f'''(x)]dx$ integralning qiymatini toping.

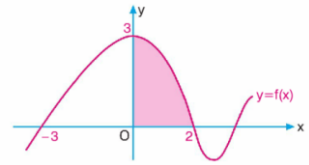
A) -6 B) -5 C) -4 D) -3

248. Integralni hisoblang.

$$\int_{1}^{4}(|x-2| + |x+3|)dx$$

A) 19 B) 29 C) 24 D) 20

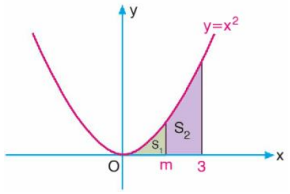
249. Chizmada $y = f(x)$ funksiyaning grafigi tasvirlangan.



Bo'yalgan soha yuzi 4 br kvadrat bo'lsa, $\int_{0}^{2} x \cdot f'(x)dx$ integralning qiymatini toping.

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

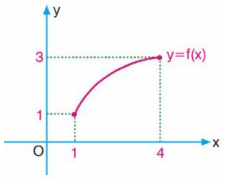
250. Chizmada $y = x^2$ parabola tasvirlangan. S_1 va S_2 sohalar yuzlari uchun quyidagi munosabat o'rinli



$S_2 = 8 \cdot S_1$ bo'lsa, m ni toping.

A) 1 B) $\sqrt[3]{2}$ C) $\sqrt[3]{3}$ D) $\sqrt[3]{4}$

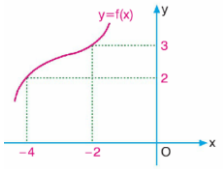
251. Chizmada $y = f(x)$ funksiyaning grafigi tasvirlangan.



Bo'lsa, $\int_{1}^{4} f(x)dx + \int_{1}^{3} f^{-1}(x)dx$ integralning qiymati nimaga teng?

A) 8 B) 9 C) 10 D) 11

252. Chizmada $y = f(x)$ funksiyaning grafigi tasvirlangan.

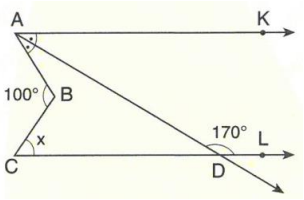


Bundan esa, $\int_{-4}^{-2} f(x)dx + \int_{2}^{3} f^{-1}(x)dx$ integralning qiymatini toping.

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

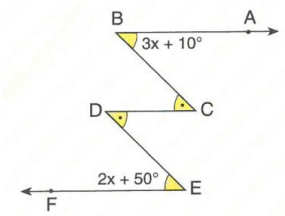
253. Rasmdagi ma'lumotlar asosida x ni toping.

A) $80°$ B) $70°$ C) $60°$ D) $55°$



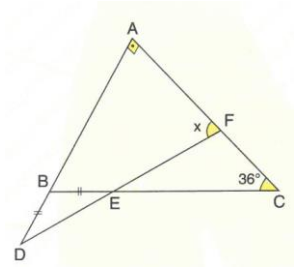
254. Rasmdagi ma'lumotlar asosida x ni toping.

A) $10°$ B) $20°$ C) $30°$ D) $40°$



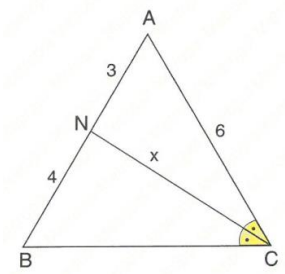
255. Rasmdagi ma'lumotlar asosida x ni toping.

A) $63°$ B) $64°$ C) $68°$ D) $72°$



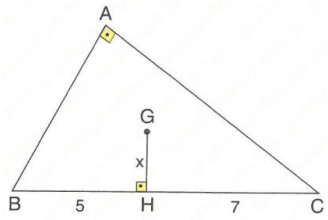
256. Rasmdagi ma'lumotlar asosida x ni toping.

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



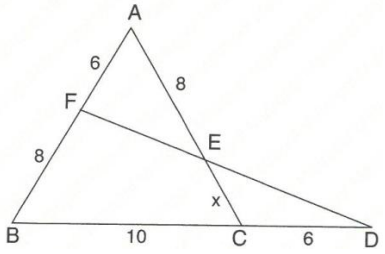
257. Rasmdagi uchburchakda G nuqta og'irlik markazi bo'lsa, x ning qiymatini toping.

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



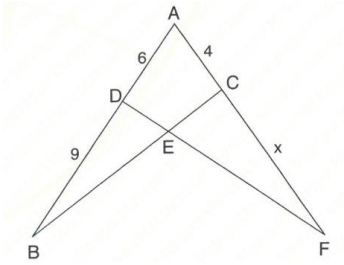
258. Rasmda $|AF| = |CD| = 6$ cm, $|AE| = |FB| = 8$ cm, $|BC| = 10$ cm ekanligidan foydalaninib $EC = x$ ni toping.

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



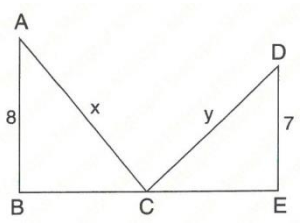
259. Agar $S(BDE) = S(ECB)$ bo'lsa, CF ni toping.

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



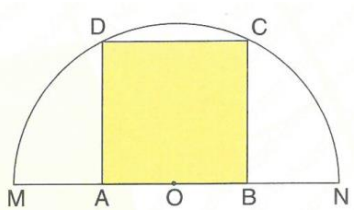
260. Rasmdagi chizmada, BE=12, AB=8 va DE=7 bo'lsa, $x + y$ ning eng kichik qiymatini toping.

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



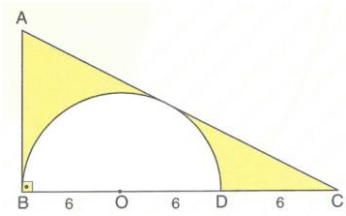
261. Yarim doiraga ichki chizilgan ABCD kvadratning yuzi 20 cm^2 ga teng. MN ni toping.

A) $\sqrt{5}$ B) $2\sqrt{5}$ C) $3\sqrt{5}$ D) 10



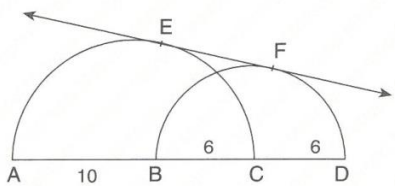
262. Agar O nuqta Yarim doiraning markazi bo'lib, $[AB] \perp [BC], |BO| = |OD| = |DC| = 6$ cm bo'lsa, Bo'yalgan sohaning yuzini toping.

A) $9(3\sqrt{3} - \pi)$ B) $12(3\sqrt{3} - \pi)$
C) $15(3\sqrt{3} - \pi)$ D) $18(3\sqrt{3} - \pi)$



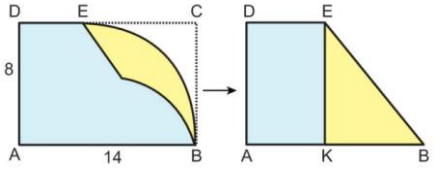
263. [AC] va [BD] chiziqlar diametri, E va F nuqtalari urunish nuqtalari. AB=10, BC=CD=6 bo'lsa, EF ni toping.

A) $\sqrt{15}$ B) $2\sqrt{15}$ C) $3\sqrt{15}$ D) $4\sqrt{15}$

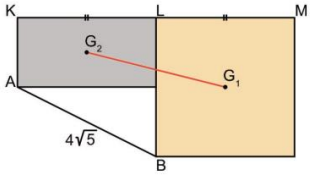


264. Tomonlari uzunligi 14 cm va 8 cm bo'lgan ABCD to'rtburchak shaklidagi qog'oz BC tomoni AB tomoniga to'g'ri keladigan tarzda buklangan. Shunga ko'ra, buklanish natijasida hosil bo'lgan trapetsiyaning yuzi qancha cm^2?

A) 60 B) 72 C) 80 D) 90

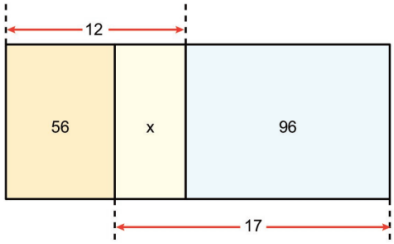


265. Berilgan rasmda G_1 kvadrat markazi, G_2 esa to'g'ri to'rtburchak markazi. Bu yerda $KL = LM$, $LB = 2 \cdot AK$ va $AB = 4\sqrt{5}$ bo'lsa, G_1G_2 ni toping.



A) $2\sqrt{17}$ B) $\sqrt{74}$ C) $6\sqrt{2}$ D) $\sqrt{70}$

266. Quyidagi rasmda uchta to'rtburchakning yuzlari mos ravishda 56, x va 96 ga teng. Sariq va to'q sariq rangga bo'yalgan maydonlardan hosil bo'lgan to'rtburchakning uzun tomoni 12 cm, sariq va ko'k rangga bo'yalgan joylaridan hosil bo'lgan to'rtburchakning uzun tomoni 17 cm.

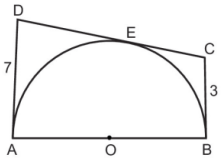


Shunga ko'ra, sariq to'rtburchakning yuzini toping.

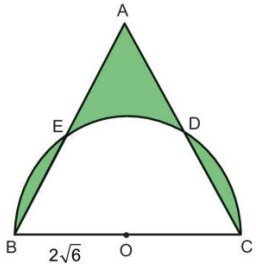
A) 24 B) 32 C) 36 D) 40

267. Berilgan shaklda A, B va E nuqtalar urinish nuqtalari bo'lib, BC=3 cm va AD=7 cm bo'lsa, Yarim doiraning radusini toping.

A) $\sqrt{21}$ B) $2\sqrt{6}$ C) 5 D) $3\sqrt{3}$



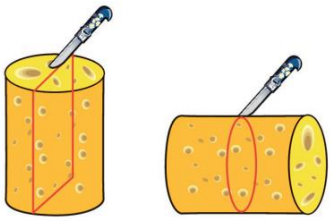
268. BC diametrli yarim doira va ABC teng tomonli uchburchaklar quyidagicha chizilgan.



Bu yerda, $OB = 2\sqrt{6}$ cm bo'lsa, bo'yalgan sohaning yuzini toping.

A) $4\pi - \sqrt{6}$ B) $4\pi - 2\sqrt{6}$ C) 6π D) 4π

269. Ikkita bir xil silindrsimon pishloqlar pichoq bilan kesiladi,

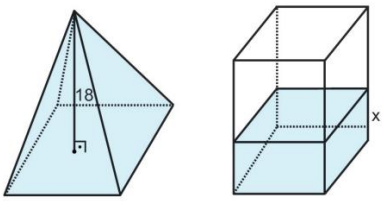


Rasm – I **Rasm - II**

I-rasmdagi to'rtburchak ko'ndalang kesim yuzini, II-rasmdagi aylana kesim yuziga nisbati $\frac{14}{3\pi}$ bo'lsa, pishloqning balandligi uning radiusi necha marta bo'ladi?

A) $\frac{14}{9}$ B) $\frac{14}{3}$ C) $\frac{7}{3}$ D) $\frac{7}{4}$

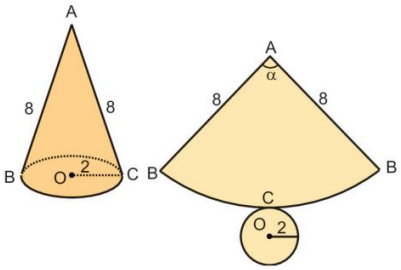
270. Rasmda balandligi 18 cm va asosining yuzlari teng bo'lgan piramida va prizma idishlar tasvirlangan.



Agar piramida idish suv bilan to'ldirilib, prizma idshga quyilsa, prizma idishdagi suvning balandligi necha cm bo'ladi?

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

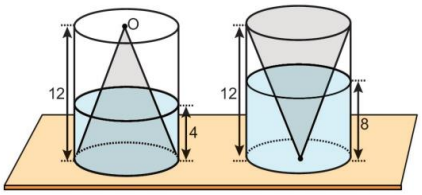
271. Quyidagi shoaklda konus va uning yoyilmasi berilgan.



Berilgan rasmdan α burchakni toping.

A) 60° B) 75° C) 90° D) 120°

272. Balandligi 12 ga teng bo'lgan konus 1-rasmda ko'rsatilganidek, balandligi 12 birlik bo'lgan ichi bo'sh silindr ichiga joylashtirilgan.



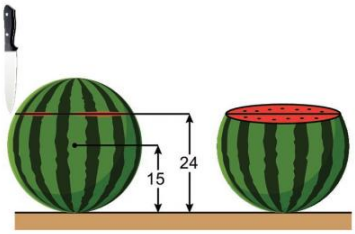
Ushbu silindr va konus orasiga V_1 hajmli suv to'ldirilgan va suvning balandligi 4 ga teng. Keyin, bu konus 2-rasmda ko'rsatilgandek teskari aylantirildi va yana bir oz suv qo'shgandan so'ng, suvning hajmi V_2 , balandligi esa 8 ga teng bo'ldi. $\frac{V_1}{V_2}$ ning qiymatini toping.

A) $\frac{4}{19}$ B) $\frac{2}{9}$ C) $\frac{8}{39}$ D) $\frac{4}{23}$

273. Agar quyidagi basketbol to'pi radiusi tennis to'pi radiusidan 6 marta katta bo'lsa, uning hajmi necha marta katta bo'ladi?

A) 216 B) 192 C) 144 D) 96

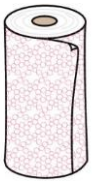
274. 15 sm radiusli sharsimon tarvuz tekis yuzada yotadi. Tarvuz er tekisligiga parallel ravishda va erdan 24 sm masofada kesilgan.



Kesilgan qismining ko'ndalang kesim yuzasini toping.

A) 144π B) 150π C) 180π D) 190π

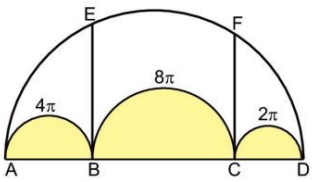
275. Quyida vertikal silindr shaklida berilgan sochiq qog'oz rulosining balandligi 22 cm, tashqi o'ng dumaloq silindrning radiusi 5,5 cm, ichki o'ng dumaloq silindrning radiusi esa 2,5 cm.



Yuqoridagi ma'lumotlarga ko'ra, qog'oz sochiqning hajmini toping.

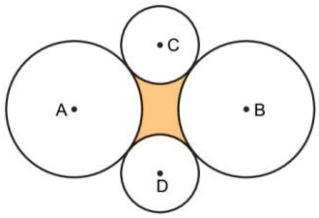
A) 480π B) 496π C) 508π D) 528π

276. Quyidagi rasmda, katta yarim doiraga uzunliklari 4π; 8π va 2π bo'lgan yarim doiralar ichki chizligan, bundan foydalanib $\frac{EB}{FC}$ ni toping.



A) $\frac{\sqrt{15}}{3}$ B) 2 C) $\frac{\sqrt{15}}{2}$ D) $\frac{\sqrt{6}}{2}$

277. Radiuslari bir-biriga teng va 3 birlik bo'lgan A va B markazlarida joylashgan aylana markazlari orasidagi masofa $4\sqrt{3}$ birlikka teng.
Markazi C va D nuqtalarida joylashgan va radiusi 1 birlik bo'lgan bu ikki doiraga teguvchi doiralar berilgan.

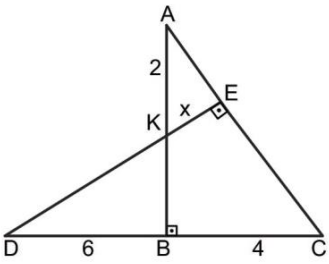


Shunga ko'ra, bo'yalgan sohaning perimetri necha birlikdan iborat?

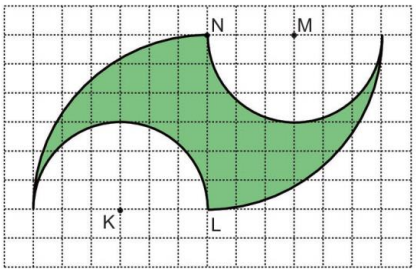
A) 3π B) $\frac{10\pi}{3}$ C) $\frac{11\pi}{3}$ D) 4π

278. Berilgan rasmdagi ma'lumotlar asosida x ning qiymatini toping.

A) $\frac{4}{\sqrt{13}}$ B) $\frac{5}{\sqrt{13}}$ C) $\frac{4}{\sqrt{10}}$ D) $\frac{3}{\sqrt{10}}$



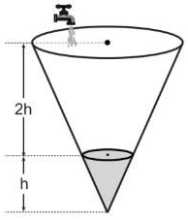
279. Agar K,L,M va N nuqtalar aylana markazlari bo'lsa,



Bo'yalgan sohaning yuzi necha brlik kvadarat?

A) 12π B) 10π C) 9π D) 8π

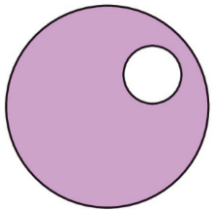
280. Agar doimiy oqim tezligi bo'lgan kran bo'yalgan qismni 4 minutda to'ldirsa, butun konusni necha daqiqada to'ldirish kerak?



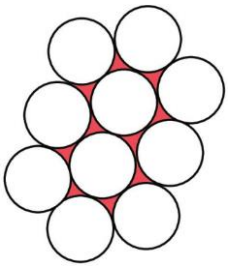
A) 126 B) 118 C) 108 D) 104

281. Rasmdagi doiralar aylanalari uzunliklari yig'indisi 18π ga, bo'yalgan soha yuzi esa 36π ga teng bo'lsa, kichik aylanalaning radusini toping.

A) 1 B) $\frac{3}{2}$ C) 2 D) $\frac{5}{2}$



282. Quyidagi rasmdagi barcha aylanalar teng va radusi 2 ga teng bo'lsa, bo'yalgan soha yuzini toping.



A) $24\sqrt{3}-6\pi$ B) $20\sqrt{3}-8\pi$
C) $20\sqrt{3}-10\pi$ D) $40\sqrt{3}-20\pi$

283. $P(x) = (\sqrt{x} - a)^2 + x^2 - ax + 4$ ko'phadni $(x + 2)$ ga bo'lgandagi qoldiqni toping.

A) 4 B) 6 C) 8 D) 10

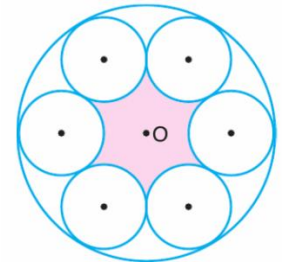
284. $(3^{20} - 1) \cdot (3^{20} + 1)$ ko'paytmani 7 ga bo'lgandagi qoldiqni toping.

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

285. $1 + (2 \cdot 4 \cdot 6 \cdot \ldots \cdot 46) \cdot (3 \cdot 5 \cdot 7 \cdot \ldots \cdot 45)$ ushbu ifodani 47 ga bo'lgandagi qoldiqni toping.

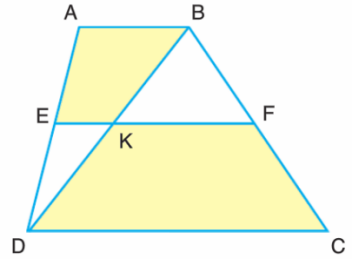
A) 0 B) 1 C) 2 D) 46

286. Markazi O nuqtada bo'lgan aylana radiusi $3\sqrt{3}$ ga teng bo'lsa, bo'yalgan sohaning yuzini toping.



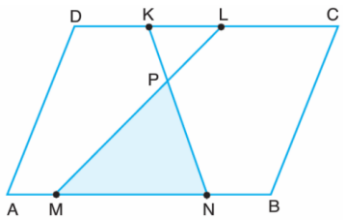
A) $10\sqrt{3} + 3\pi$ B) $12\sqrt{3} + 6\pi$
C) $18\sqrt{3} - 6\pi$ D) $18\sqrt{3} - 3\pi$

287. ABCD trapetsiyaning yuzi 60 ga teng bo'lib, EF uning o'rta chizig'I bo'lsa, $S_{ABKE} + S_{CDKF}$ ni toping.



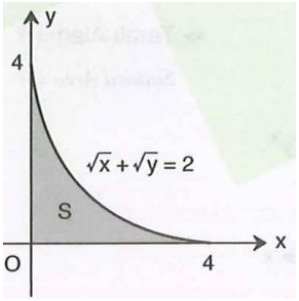
A) 30 B) 36 C) 45 D) 48

288. ABCD parallelogrammda $3|KL| = 2|MN| = |AB|$ bo'lsa, $\frac{S_{PMN}}{S_{ABCD}}$ ning qiymatini toping.



A) $\frac{3}{20}$ B) $\frac{1}{5}$ C) $\frac{1}{4}$ D) $\frac{3}{10}$

289. $\sqrt{x}+\sqrt{y}=4$, $x=0$ va $y=0$ chiziqlar bilan chegaralangan sohaning yuzini toping.



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

290. Agar $f(x)=\log_2 x$ va $(g\circ f)(x)=x+3$ bo'lsa, $g(x)$ ni toping.

A) 2^x+3 B) 2^x+2 C) $\log_2(x+3)$ D) 2^x

291. Tenglamani yeching:

$$\log_3\left[3-\log_2\left(\frac{x}{3}\right)\right]=1$$

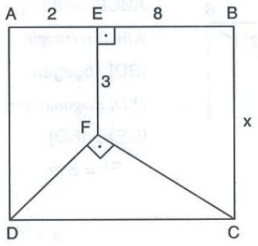
A) 1 B) 2 C) 3 D) 4

292. Tengsizlikni yeching:

$$\log_2(\log_3(x+1))\le 1$$

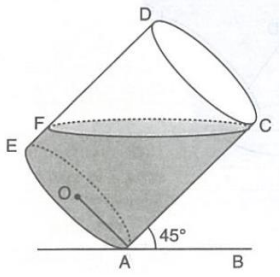
A) $(8,\infty)$ B) $(0,8]$ C) $(-1,8]$ D) $(-\infty,6]$

293. Rasmda berilgan ma'lumotlar asosida x ni toping.



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

294. Agar $|EF|=2$ va $|OA|=4$ bo'lsa, slindrning ichidagi suyuqlikning hajmini toping.



A) 12π B) 24π C) 48π D) 96π

295. Agar $\vec{a}(-1,3)$, $\vec{b}(1,2)$, $\vec{c}(-2,1)$ vektorlar uchun $\vec{c} = x\vec{a} + y\vec{b}$ tenglik o'rinli bo'lsa, $x + y$ ning qiymatini toping.

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

296. Agar geometrik progressiyaning dastlabgi n ta hadi yig'indisi $S_n = 5 \cdot 3^n - 5$ bo'lsa, b_2 ni toping.

A) 10 B) 18 C) 25 D) 30

297. Agar $f(x-1) + f(2x) = 14 - f(3x-1)$ bo'lsa, $f(2) + f(0) + f(-1)$ ning qiymatini toping.

A) 7 B) 11 C) 14 D) 18

298. f funksiya uchun,

$$f(2x^2 - 4x + 7) = -x^2 + 2x + 4$$

tenglik o'rinli bo'lsa, $f^{-1}\left(-\frac{1}{2}\right)$ ni toping.

A) 11 B) 13 C) 14 D) 16

299. Tenglamani yeching:

$$\arcsin x + \operatorname{arccot}\frac{5}{12} = \pi$$

A) $\frac{12}{13}$ B) $\frac{10}{13}$ C) $\frac{5}{13}$ D) $\frac{5}{12}$

300. Agar

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

bo'lsa, $(f^{-1})'(1)$ ning qiymatini toping.

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

JAVOBLAR

1	A
2	B
3	C
4	C
5	C
6	D
7	D
8	B
9	D
10	D
11	C
12	D
13	B
14	D
15	B
16	A
17	B
18	A
19	A
20	A
21	C
22	B
23	C
24	C
25	A
26	C
27	C
28	D
29	D
30	B
31	A
32	B
33	B
34	C
35	D
36	B
37	C
38	D
39	B
40	C

41	A
42	A
43	C
44	B
45	B
46	C
47	C
48	B
49	B
50	D
51	B
52	C
53	C
54	C
55	A
56	C
57	D
58	C
59	B
60	A
61	D
62	D
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78	B
79	D
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87	D
88	A
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90	C
91	C
92	D
93	D
94	B
95	C
96	B
97	C
98	D
99	C
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101	B
102	D
103	A
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106	D
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108	B
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139	A
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141	C
142	A
143	B
144	A
145	D
146	D
147	C
148	B
149	C
150	C
151	A
152	C
153	C
154	B
155	A
156	A
157	C
158	B
159	A
160	C

161	A
162	A
163	A
164	A
165	C
166	D
167	D
168	A
169	C
170	C
171	A
172	B
173	B
174	D
175	B
176	C
177	D
178	B
179	C
180	A
181	B
182	B
183	B
184	D
185	C
186	D
187	D
188	D
189	B
190	A
191	A
192	C
193	A
194	B
195	C
196	C
197	C
198	D
199	D
200	D

201	C
202	D
203	B
204	C
205	C
206	B
207	D
208	B
209	A
210	C
211	C
212	B
213	B
214	A
215	D
216	B
217	D
218	B
219	C
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222	C
223	A
224	C
225	D
226	C
227	D
228	B
229	B
230	A
231	B
232	C
233	A
234	B
235	A
236	D
237	A
238	A
239	D
240	A

241	B
242	B
243	D
244	C
245	B
246	C
247	A
248	A
249	B
250	C
251	D
252	B
253	A
254	D
255	A
256	B
257	D
258	B
259	B
260	A
261	D
262	D
263	B
264	C
265	A
266	D
267	A
268	D
269	C
270	B
271	C
272	D
273	A
274	A
275	D
276	A
277	B
278	A
279	C
280	C

281	D
282	D
283	B
284	C
285	A
286	C
287	C
288	A
289	D
290	A
291	C
292	B
293	B
294	D
295	D
296	D
297	C
298	D
299	A
300	A