1. 4200 sonining tub bo'luvchilari yig'indisini toping.
   A) 17
   B) 18
   C) 48
   D) 14880
2. 108 va 72 sonlarining umumiy natural bo'luvchilari soni va EKUKi yig'indisini toping.
   A) 225
   B) 168
   C) 144
   D) 252
3. Bir ishni Ahmad bilan Mahmud 12 kunda, Mahmud bilan Ali 8 kunda, Ahmad bilan Ali bo'lsa 6 kunda tugatishadi. Bu ishni Ahmadning bir o'zi necha kunda tugatadi.
   A) 9,6
   B) 24
   C) 18
   D) 16
4. Kasrni hisoblang: $\frac{1}{2\cdot5}+\frac{1}{4\cdot7}+\frac{1}{7\cdot10}+\frac{1}{10\cdot13}+\cdots+\frac{1}{37\cdot40}$
   A) $\frac{19}{40}$
   B) $\frac{11}{40}$
   C) $\frac{19}{120}$
   D) $\frac{7}{40}$
5. Saidning test ishlashi uchun ketadigan vaqt 40% kamayishi uchun u mehnat unumdorligini necha foizga orttirish kerak.
   A) $\frac{100}{3}$
   B) 40
   C) $\frac{200}{3}$
   D) 60
6. Ifodani soddalashtiring. $\frac{a^2+4a+2b-b^2+3}{a+b+1}-3.$
   A) $a+b$
   B) $a-b$
   C) $a-b+1$
   D) $a+b+1$
7. Hisoblang: $\sqrt[3]{2\sqrt{6}-5}\cdot\sqrt[6]{49+20\sqrt{6}}.$
   A) 1
   B) -1
   C) $4\sqrt{6}$

D) 2

8. $\sqrt{32-p^2}+\sqrt{16-p^2}=8$ bo'lsa, $\sqrt{32-p^2}-\sqrt{16-p^2}=?$

A) aniqlab bo'lmaydi

B) 2

C) 4

D) 6

9. $y=-3\sqrt{5}$ va $z=-5\sqrt{3}$ bo'lsa, $\sqrt{9z^2-6yz+y^2}-\sqrt{y^2-2yz+z^2}$ ning qiymatini toping.

A) $6\sqrt{5}$

B) $10\sqrt{3}$

C) $-10\sqrt{3}$

D) $-6\sqrt{5}+10\sqrt{3}$

10. $(x^2+6x+7)\cdot(x^2+6x+6)<2$ tengsizlikni qanoatlantiruvchi butun sonlar yig'indisini toping.

A) -12

B) -6

C) -9

D) $\emptyset$

11. $-2<x<2$ bo'lganda $\frac{|x+2|-x+2}{|-2-x|-|x-2|}$ ni hisoblang.

A) $\frac{2}{x}$

B) $-\frac{2}{x+2}$

C) 1

D) 2

12. $x+\frac{2}{x+\frac{2}{x+\frac{2}{\dots}}}=6,\quad x=?$

A) 1

B) $\frac{1}{2}$

C) $\frac{17}{3}$

D) hisoblab bo'lmaydi

13. Arifmetik progressiyaning birinchi, ikkinchi va to'rtinchi hadlari geometrik progressiyaning ketma-ket hadlari bo'lib qolmoqda. Geometrik progressiyaning maxrajini toping.

A) 0,5

B) 2

C) 4

D) aniqlab bo'lmaydi

14. Cheksiz kamayuvchi geometrik progressiyaning birinchi hadi ikkinchisidan 8 ta ortiq, hadlarining yig'indisi esa 18 ga teng. Progressiyaning uchinchi hadini toping.

A) $-1\frac{1}{3}$

B) $1\frac{2}{3}$

C) $1\frac{1}{3}$

D) $2\frac{2}{3}$

15. $\begin{cases} 2x^2+2xy+y=6 \\ x+2y=6 \end{cases}$ tenglamalar sistemasini qanoatlantiruvchi barcha y lar yig'indisini toping.

A) $16\frac{1}{2}$

B) $8\frac{3}{4}$

C) $5\frac{1}{2}$

D) -3

16. Agar $2x^3-3ax^2+bx-12=0$ tenglamaning ikkita ildizi 1 va -2 bo'lsa, uchinchi ildizini toping.

A) 3

B) $-\frac{3}{2}$

C) -3

D) $\frac{3}{2}$

17. $log_3 x = 3^x$ tenglama nechta ildizga ega?

A) 0

B) 1

C) 2

D) 4

18. Quyidagi tenglamaning yechimlari yig'indisini toping. $\sqrt[3]{\frac{2-x}{1+x}}-3\sqrt[3]{\frac{1+x}{2-x}}=-2$

A) $-\frac{29}{26}$

B) $\frac{1}{2}$

C) ildizi yo'q

D) $-\frac{8}{13}$

19. $f^{-1}(x)$ funksiya $f(x)$ funksiyaga teskari funksiya. $f(3)=7,\ f(7)=8$, va $f^{-1}(4)=5$ bo'lsa, $\frac{f^{-1}(7)+f^{-1}(8)}{f(5)}=?$

A) 3

B) 2,5

C) 2,2

D) 4

20. Agar $ctga = -\frac{1}{4}$ bo'lsa, $2 - 17cos2a + \frac{1}{sin2a}$ ni hisoblang.

A) $-\frac{119}{8}$

B) 12,5

C) $\frac{119}{8}$

D) $-12,5$

21. $y = 3 - (a-2)x + ax^2$ parabola uchi ordinata o'qida yotsa, a ni toping.

A) 3

B) 1

C) 0

D) 2

22. $y = sin^2(lnx)$ funksiyaning hosilasini toping.

A) $\frac{\sin(2lnx)}{x}$

B) $\cos(2lnx)$

C) $2cos^2(lnx)$

D) $\frac{sin^2(lnx)}{x}$

23. Aniq integralni hisoblang: $\int_a^{a+3}[x]dx.\ a \in Z.$

A) 3

B) $2a + 3$

C) $3a + 3$

D) $3a + 4,5$

24. ABCD kvadratning A uchidan BC tomonga AE chiziq o'tkazilgan. BE=3EC, AECD to'rtburchakning yuzi 90 ga teng bo'lsa, ABE uchburchak yuzini toping.

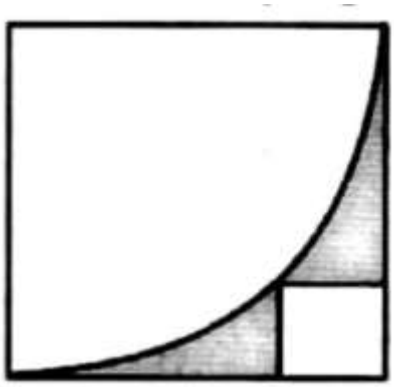
A) 4

B) 48

C) 54

D) 135

25. Tomoni 1 birlik bo'lgan kvadratga chorak doira chizilgan bo'lsa, bo'yalgan soha yuzini toping.



A) $1-\frac{\pi+\sqrt{2}}{4}$

B) $\frac{4\sqrt{2}-2-\pi}{4}$

C) $\frac{4-2\sqrt{2}-\pi}{4}$

D) $1-\frac{\pi}{4}-\frac{\sqrt{2}}{4}$

26. Agar uchburchakning $a,\ \beta,\ \gamma$ burchaklari uchun $tga+tg\beta+tg\gamma=3+2\sqrt{3}$ tenglik o'rinli bo'lsa, $tga\cdot tg\beta\cdot tg\gamma$ ning qiymatini toping.

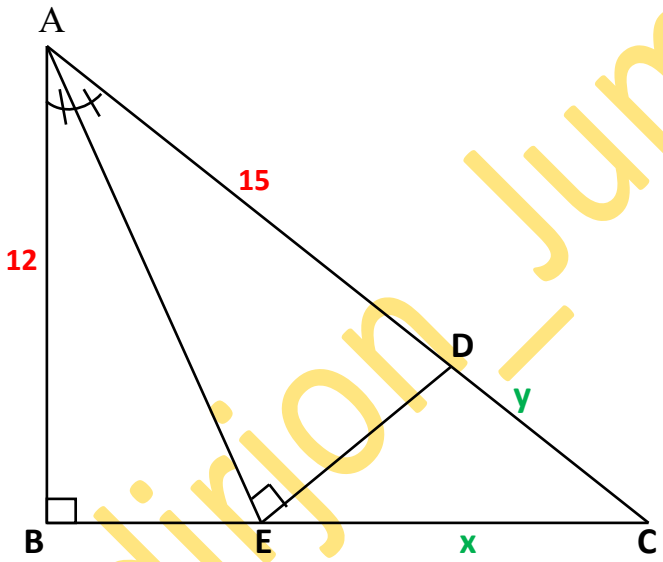
A) $3+2\sqrt{3}$

B) $2+3\sqrt{2}$

C) $3+\sqrt{3}$

D) 1

27. $x+y=?$



A) 5

B) 10

C) 15

D) 18

28. Hisoblang: $2+tg^2(-arccos\frac{\sqrt{5}}{5})$.

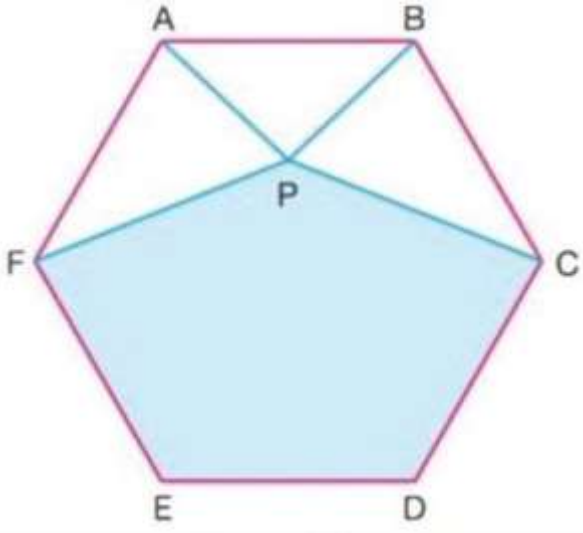
A) 6

B) 5

C) 1

D) 3

29. Rasmda muntazam oltiburchak tasvirlangan. $S_{AFP}=18$, $S_{APB}=11$, $S_{BPC}=14$ bo'lsa, bo'yalgan soha yuzini toping.



A) 73
B) 78
C) 80
D) 83

30. $P(x) = x^{100}$ ko'phadni $(x-1)^2$ ga bo'lgandagi qoldiq $R(x)$ bo'lsa, $R(2) =?$

A) 101
B) 100
C) 200
D) 110

31. 14 nafar o'rtoq o'zaro shaxmat turniri o'tkazishmoqchi. Bunda har bir bola qolgan har bir bola bilan ikki partiya shaxmat o'ynaydi. Bu turnirda necha partiya o'ynaladi.

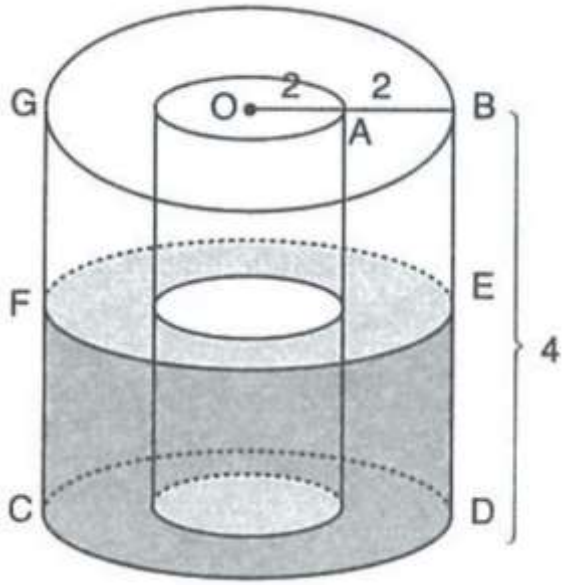
A) 91
B) 100
C) 140
D) 182

32. 40 nafar o'quvchidan 34 nafari bananni, 22 nafari olmani yoqtiradi, 2 nafari ikkala mevani ham yoqtirmaydi. Ixtiyoriy tanlangan o'quvchining olmani yoqtirish sharti bilan bananni yoqtirishining ehtimolligini toping.

A) $\frac{8}{17}$
B) $\frac{9}{11}$
C) $\frac{4}{34}$
D) $\frac{17}{19}$

Topshiriqlar (33-35) va javob variant (A-F) larini o‘zaro moslashtiring.

Rasmda balandliklari 4 ga, asoslarining radiuslari 2 va 4 bo’lgan ichma-ich silindr tasvirlangan. Ularning asoslari markazlari ustma-ust tushadi.



A) 24π

B) $48\ \pi$

C) 3

D) 4

E) 6

F) $32\ \pi$

33. Ikki silindr orasidagi balandligi 4 bo’lgan suvning hajmini toping.

34. Silindrlar orasidagi suvni asosi katta silindrning o’ziga quyilsa, bu silindrning balanligi qancha bo’ladi?

35. Silindrlar orasidagi suvning choragini asosi kichik silindrga quyilsa, bu silindrning balandligi qancha bo’ladi?

36. $x^4 + 4x - 1 = 0$ tenglama berilgan.

A) Tenglama nechta haqiqiy yechimga ega.

Javob: a)_____

B) Tenglamaning haqiqiy ildizlari yig’indisini toping.

Javob: b)_____

37. $(1 + cos4x) \cdot sin2x \geq cos^2 2x$ tengsizlik berilgan.

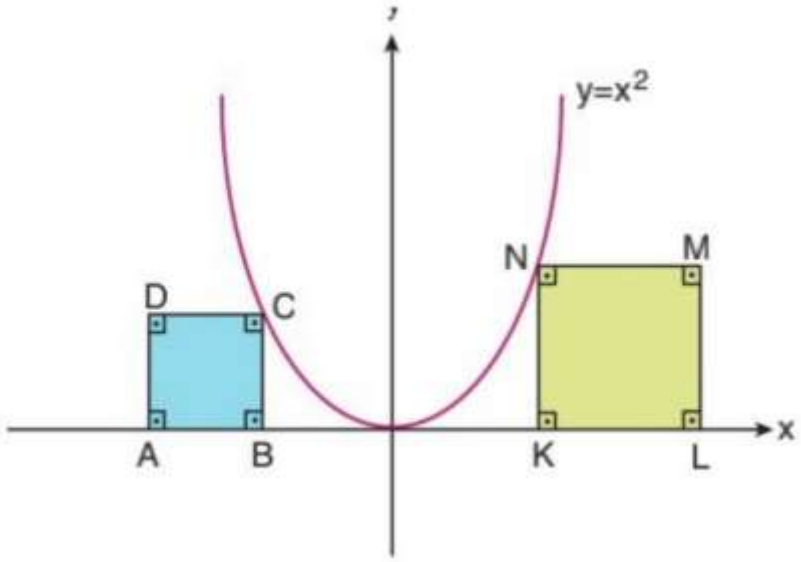
A) Tengsizlikni yeching.

Javob: a)_____

B) $[0;\pi]$ oraliqdagi eng kichik ildizini toping.

Javob: b)_____

38. Bir tomoni Ox o'qida va bir uchi $y=x^2$ parabolada bo'lgan $ABCD$ va $KLMN$ kvadratlar berilgan. $L(6;0)$ nuqtada joylashgan. $S_{KLMN}=16\cdot S_{ABCD}$.



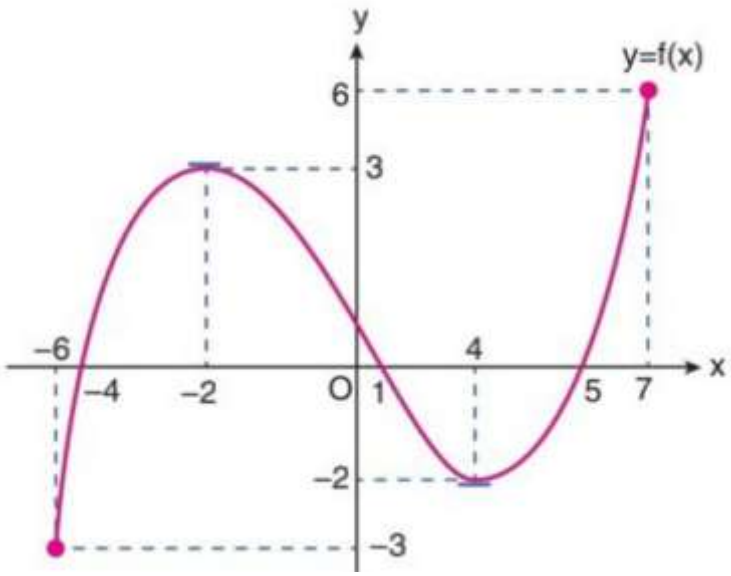
A) A nuqtaning absissasini toping.

Javob: a)_____

B) $S_{KLMN}=?$

Javob: b)_____

39. Quyida $[-6;7]$ oraliqda $f(x)$ funksiya grafigi tasvirlangan.



A) $\frac{f(4)-f^{-1}(-3)+f'(4)}{f^{-1}(6)+f(-2)+f'(-2)}=?$

Javob: a)_____

B) $f(x)\cdot f'(x)\le 0$ tengsizlikni $[-6;7]$ oraliqda yeching.

Javob: b)_____

40. $\int x\cdot f'(x)dx = x^2+x+4-\int f(x)dx$.

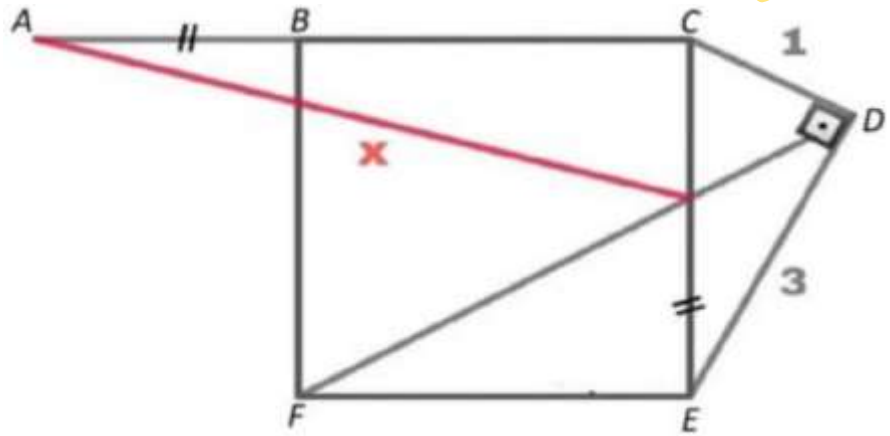
A) $f(2)=-1$ bo'lsa, $f(-1)=?$

Javob: a)_____

B) $f(-3)=4$ bo'lsa, $f(5)=?$

Javob: b)_____

41. Quyidagi rasmda BCEF kvadrat bo'lsa va rasmda berilganlarga ko'ra;



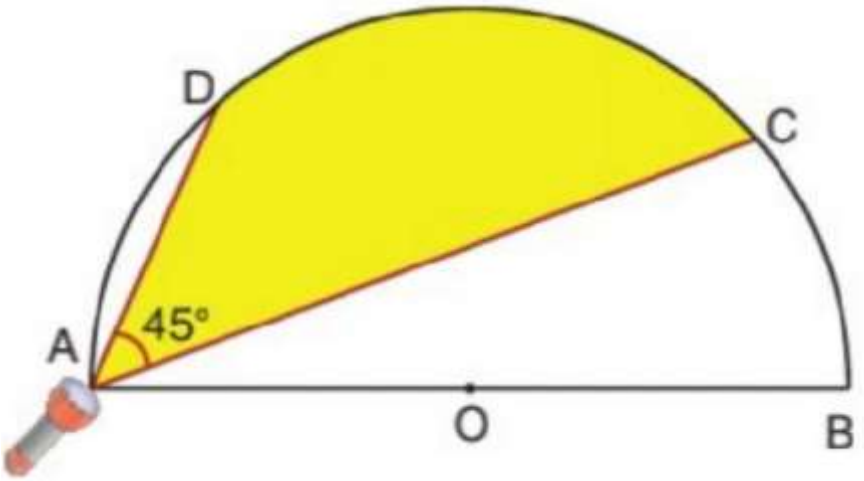
A) x ni toping.

Javob: a)_____

B) $S_{BCEF}=?$

Javob: b)_____

42. Quyidagi rasmda markazi O va diametri AB bo'lgan yarimdoira shaklidagi maydonni yoritish uchun A nuqtada fonar o'rnatilgan. $AB=8\,m,\ \overset{\frown}{AD}=\overset{\frown}{BC},\ \angle DAC=45°$.



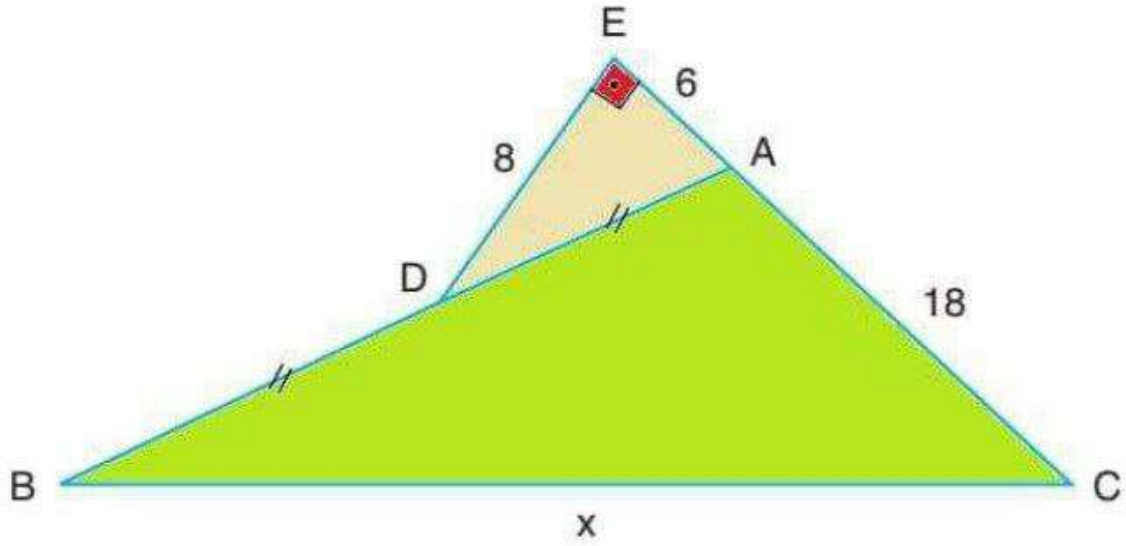
A) Fonar yoritayotgan maydon yuzini toping.

Javob: a)_____

B) ACB shaklning yuzini toping(bir tomoni BC yoydan iborat uchburchak).

Javob: b)_____

43. Quyidagi rasmda berilganlarga ko'ra,



A) x ni toping.

Javob: a)_____

B) S_{ABC} =?

Javob: b)_____

44. To'g'ri burchakli parallelepiped shaklidagi suv bilan to'la akvariumning bo'yi 8 m, eni 3 m balandligi 5 m. Akvarium bir endian ushlab ko'tarila boshlandi(bir eni yerda qoldi).

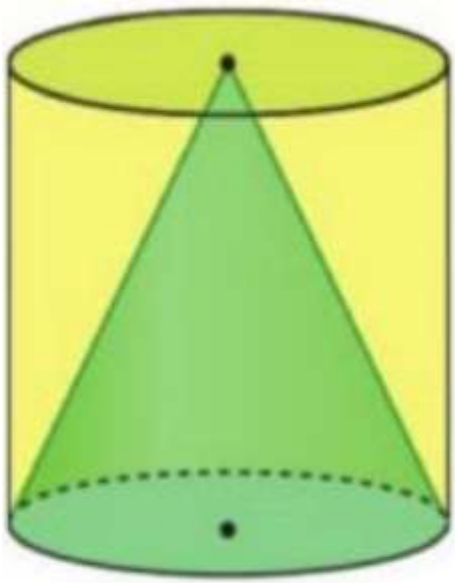
A) Akvarium asosi yer bilan (bo'yi va yer orasidagi burchak) 30° hosil qilganda, akvariumdagi suv necha litrga kamaygan bo'ladi.(*l*)

Javob: a)_____

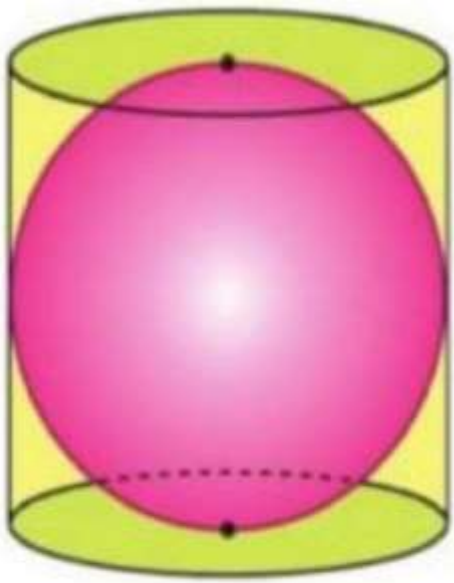
B) Akvarium asosi yer bilan (bo'yi va yer orasidagi burchak) 45° hosil qilganda, akvariumdagi suv necha litrga teng bo'ladi.(*l*)

Javob: b)_____

45. I va II rasmda balandligi asosining diametriga ikkita bir xil silindr tasvirlangan. Bu silindrlarning ichiga asoslariga urinadigan qilib konus va shar joylashtirilgan.



1-rasm



2-rasm

A) Bu jismlar orasida hosil bo'lgan bo'shliqlarga to'ldirish mumkin bo'lgan umumiy suv miqdorining necha foizi bitta silindrsimon idishni to'ldiradi?

Javob: a)_____

B) Silindrlar ichidagi konus va sharning hajmlari nisbatini toping.

Javob: b)_____

Test Rash modelida tekshiriladi.

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Yaxshilik qil, suvga tashla baliq bilar,
Baliq bilmasa Holiq bilar.