2017-yil matematika variant yechimlari (spectrum)

24-variant

Bizning kanal : @axborotnoma

Adminsratorlar hayati : @axborotnoma_bot

Matematika yordam guruhi : @axborotnomaguruhi

Reklama xizmati : @axborotnoma_reklama

24-variant

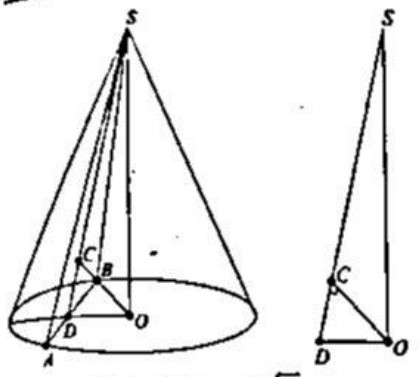
1. Konus asosining markazidan 3 sm masofada AB vatar o'tkazilgan. SO konus balandligi. $SO = 6\sqrt{2}$ bo'lsa, O nuqtadan ASB tekislikkacha bo'lgan masofani toping.

Yechish:

$OD = 3,\ SO = 6\sqrt{2}$

$SD^2 = SO^2 + OD^2 = (6\sqrt{2})^2 + 3^2 = 81$

$SD = 9$



$$OC = \frac{SO \cdot OD}{SD} = \frac{6\sqrt{2} \cdot 3}{9} = 2\sqrt{2}$$

$OC = 2\sqrt{2}$.

Javob: $2\sqrt{2}$.

2. $t^2 + t - 1 = 0$ bo'lsa; $\left(t - \frac{1}{t}\right)^2$ ning qiymatini toping.

Yechish:

$t^2 + t - 1 = 0$ bo'lsa $\left(t - \frac{1}{t}\right)^2$ ning qiymatini topamiz:

$t^2 + t = 1 \mid :t$

$$\frac{t^2 + t}{t} = \frac{1}{t} \Rightarrow t + 1 = \frac{1}{t}$$

$$\left(t - \frac{1}{t}\right)^2 = (t - (t + 1))^2 = (t - t - 1)^2 = 1.$$

Javob: 1.

3. $f(x) = 4 + 3\sin x$ funksiyaning $(\pi; \pi)$ nuqtadan o'tuvchi boshlang'ich funksiyasini toping.

Yechish:

$f(x) = 4 + 3\sin x$, $A(\pi; \pi)$,
$F(x) = ?$
1) $f(x) = 4 + 3\sin x$ funksiyaning boshlang'ich funksiyasi.
$F(x) = 4x - 3 \cdot \cos x + C$
2) $(\pi; \pi)$, $\pi = 4\pi - 3 \cdot \cos\pi + C$
$C = -3\pi - 3$.
3) $F(x) = 4x - 3 \cdot \cos x - 3\pi - 3 =$
$= 4x - 3(\cos x + \pi + 1)$.

Javob: $4x - 3(\cos x + \pi + 1)$.

4. $\operatorname{tg}20° + \operatorname{tg}40° + \operatorname{tg}60° + \ldots +$
$+ \operatorname{tg}160° + \operatorname{tg}180°$ yig'indisini hisoblang.

Yechish:

1) keltirish formulasidan foydalanib yechamiz:
$\operatorname{tg}160° = \operatorname{tg}(180° - 20°) = -\operatorname{tg}20°$
$\operatorname{tg}140° = \operatorname{tg}(180° - 40°) = -\operatorname{tg}40°$
$\operatorname{tg}120° = \operatorname{tg}(180° - 60°) = -\operatorname{tg}60°$
2) $\operatorname{tg}20° + \operatorname{tg}40° + \operatorname{tg}60° + \ldots$
$-\operatorname{tg}60° - \operatorname{tg}40° - \operatorname{tg}20° + \operatorname{tg}180° = 0$.

Javob: 0.

5. $2\sin^2\alpha - 1$ ifodani ko'paytma ko'rinishiga keltiring.

Yechish:

$2\sin^2\alpha - 1$ ko'paytma ko'rinishida yozamiz:
1) $2\sin^2\alpha - 1 = 2\sin^2\alpha - \cos^2\alpha - \sin^2\alpha =$
$= \sin^2\alpha - \cos^2\alpha = (\sin\alpha - \cos\alpha)(\sin\alpha + \cos\alpha)$
2) $(\sin\alpha - \cos\alpha)(\sin\alpha + \cos\alpha) =$

$$= \sqrt{2}\left(\frac{\sqrt{2}}{2}\sin\alpha - \frac{\sqrt{2}}{2}\cos\alpha\right) \cdot$$

$$\cdot\sqrt{2}\left(\frac{\sqrt{2}}{2}\sin\alpha + \frac{\sqrt{2}}{2}\cos\alpha\right) =$$

$= 2 \cdot (\sin\alpha \cdot \cos 45° - \sin 45° \cdot \cos\alpha) \cdot$
$\cdot (\sin\alpha \cdot \cos 45° + \sin 45° \cdot \cos\alpha) =$
$= 2\sin(\alpha - 45°) \cdot \sin(\alpha + 45°) =$
$= -2\sin(45° - \alpha) \cdot \sin(\alpha + 45°)$.

Javob: $-2\sin(45° - \alpha) \cdot \sin(\alpha + 45°)$.

6. Tengsizlikni yeching:

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

Yechish:

1) aniqlanish sohasi $x^2 + 3x + 2 \neq 0$,
$x + 2 \neq 0$
$(x + 1)(x + 2) \neq 0$
$(-\infty; -2) \cup (-2; -1) \cup (-1; \infty)$

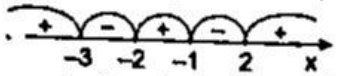
2) $\frac{x^2 - 7x - 2}{x^2 + 3x + 2} - \frac{2x - 8}{x + 2} \geq 0$

$$\frac{x^2 - 7x - 2}{(x+1)(x+2)} - \frac{2x - 8}{x + 2} \geq 0$$

$$\frac{x^2 - 7x - 2 - 2x^2 - 2x + 8x + 8}{(x+1)(x+2)} \geq 0$$

$\frac{-x^2-x+6}{(x+1)(x+2)} \geq 0$, $\frac{x^2+x-6}{(x+1)(x+2)} \leq 0$,

$\frac{(x-2)(x+3)}{(x+1)(x+2)} \leq 0$



$x \in [-3; -2) \cup (-1; 2]$.

Javob: $[-3; -2) \cup (-1; 2]$.

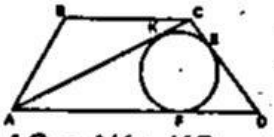
7. Qarang: 23-variant 28-savol (167-bet).

8. Qarang: 23-variant 20-savol (165-bet).

9. ABCD trapetsiyaning AD katta asosi 12 ga teng. ACD uchburchakka aylana ichki chizilgan bo'lib, u CD yon tomonini D uchidan boshlab hisoblaganda 5 va 3 ga teng kesmalarga ajratgan holda urinadi. AC diagonal uzunligini toping.

Berilgan:
ABCD – trapetsiya
$AD = 12$
$DE = FD = 5$
$CE = 3$
$AC = ?$

Yechish:



$AC = AK + KC$
$AK = AF$,
$KC = CE = 3$

$AF = AD - FD = 12 - 5 = 7$
$AC = 7 + 3 = 10$.

Javob: 10.

10. $\frac{2}{|x+1|+1} \leq 2 - |x+1|$ tengsizlikning barcha butun yechimlari yig'indisini toping.

Yechish:

$\frac{2}{|x+1|+1} \leq 2 - |x+1|$

1) $|x + 1| = a$ *belgilaymiz:*

$\frac{2}{a+1} \leq 2 - a$,

$\frac{2-2a+a^2-2+a}{a+1} \leq 0$

$\frac{a^2-a}{a+1} \leq 0 \Rightarrow \frac{a(a-1)}{a+1} \leq 0$,

$0 \leq a \leq 1$.

2) $0 \leq |x + 1| \leq 1$, $|x + 1| \leq 1$,
$-1 \leq x + 1 \leq 1$, $-2 \leq x \leq 0$. $x \in [-2; 0]$
3) $[-2; 0]$ *butun sonlar yig'indisi*
$-2 - 1 + 0 = -3$.

Javob: –3.

11. Ifoda ning qiymatini toping

$$\frac{2 \cdot 4^{-2} + (3^{-2})^2 \cdot \left(\frac{1}{9}\right)^{-2}}{5^{-3} \cdot 25^2 + (0{,}7)^0 \cdot \left(\frac{1}{2}\right)^{-2}}.$$

Yechish:

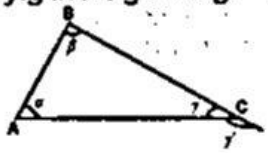
$$\frac{2 \cdot 4^{-2} + (3^{-2})^2 \cdot \left(\frac{1}{9}\right)^{-2}}{5^{-3} \cdot 25^2 + (0{,}7)^0 \cdot \left(\frac{1}{2}\right)^{-2}} = \frac{\frac{2}{16} + 3^{-4} \cdot 3^4}{5^{-3} \cdot 5^4 + 2^2} =$$

$$= \frac{\frac{1}{8} + 1}{5 + 4} = \frac{\frac{9}{8}}{9} = \frac{9}{8 \cdot 9} = \frac{1}{8}$$

Javob: $\frac{1}{8}$.

12. Quyida keltirilgan jumlalardan noto'g'risini toping.

Yechish:
Uchburchakning tashqi burchagi o'ziga qo'shni bo'lmagan ichki burchaklari yig'indisiga teng.



$\gamma' = \alpha + \beta$

Javob: uchburchakning tashqi burchagi, ikkita ichki burchaklari yig'indisiga teng.

13. Qarang: 19-variant 30-savol (141-bet).

14. $\frac{2}{x} + 3 \leq \sqrt{41 - \frac{16}{x}}$ tengsizlikni yeching.

Yechish:

1) aniqlanish sohasi $x \neq 0$ *va* $41 - \frac{16}{x} \geq 0$.

$\frac{41x-16}{x} \geq 0$, $x < 0$, $x \geq \frac{16}{41}$.

2) tengsizlikning ikkala qismini kvadratga ko'taramiz:

$$\left(\frac{2}{x}+3\right)^2 \le 41-\frac{16}{x}$$

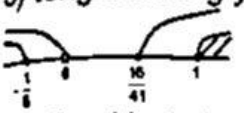
$$\frac{4}{x^2}+\frac{4\cdot 3}{x}+9-41+\frac{16}{x}\le 0$$

$$\frac{4}{x^2}+\frac{28}{x}-32\le 0,\ \frac{1}{x^2}+\frac{7}{x}-8\le 0$$

$$\frac{-8x^2+7x+1}{x^2}\le 0,\ 8x^2-7x-1\ge 0$$

$$x\le -\frac{1}{8},\ x\ge 1$$

3) tengsizlikning yechimi:



$x < 0$ yoki $x \ge 1$.

Javob: $x < 0$ yoki $x \ge 1$.

15. Qarang: 23-variant 7-savol (163-bet).

16. $y^2 - xy - 2x^2 - 13 = 0$ tenglamaning butun yechimlari nechta?

Yechish:

$y^2 - xy - 2x^2 - 13 = 0$ tenglamani ko'paytuvchilarga ajratamiz:

$y^2 - x^2 - xy - x^2 = 13$

$(y - x)(y + x) - x(y + x) = 13$

$(y + x)(y - 2x) = 13$

$(y + x)\cdot(y - 2x) = 13$ tenglama quyidagi tenglamalar sistemasiga teng kuchli:

1) $\begin{cases} y+x=1 \\ y-2x=13 \end{cases}$; 2) $\begin{cases} y+x=13 \\ y-2x=1 \end{cases}$;

3) $\begin{cases} y+x=-1 \\ y-2x=-13 \end{cases}$; 4) $\begin{cases} y+x=-13 \\ y-2x=-1 \end{cases}$

Har bir tenglamalar sistemasini yechib, tenglamaning butun yechimlarini topamiz.

1) $\begin{cases} y+x=1, \\ y-2x=13 \end{cases}$ 2) $\begin{cases} y+x=13 \\ y-2x=1 \end{cases}$

$3x = -12$ $3x = 12$

$x = -4$ $x = 4$

$y = 5$ $y = 9$

$(-4;\ 5)$ $(4;\ 9)$

3) $\begin{cases} y+x=-1 \\ y-2x=-13 \end{cases}$ 4) $\begin{cases} y+x=-13 \\ y-2x=-1 \end{cases}$

$3x = 12$ $3x = -12$

$x = 4$; $x = -4$

$y = -5$ $y = -9$

$(4;-5)$ $(-4;\ -9)$

Demak, tenglamaning butun yechimlari: $(-4; 5)$, $(4; 9)$, $(4; -5)$, $(-4; -9)$ 4 ta.

Javob: 4.

17. a va b natural sonlarning umumiy bo'luvchilari soni 6 ga teng bo'lsa, $3a + b$ va a sonlarning umumiy bo'luvchilari nechta?

Yechish:

$a, b \in N$. Umumiy bo'luvchisi 6 bo'lsa, ya'ni $\tau(EKUB(a; b)) = 6$ bo'lsa,

$\tau(EKUB(3a + b; a)) = 6$ bo'ladi. Masalan:

$a = 28$, $b = 84$, $a = 2^2\cdot 7$,

$b = 2^2\cdot 7\cdot 3$.

$EKUB(a; b) = 2^2\cdot 7$

$\tau(EKUB(a; b)) = (2 + 1)\cdot(1 + 1) = 6$

$3a + b = 3\cdot 28 + 84 = 168 = 2^3\cdot 3\cdot 7$

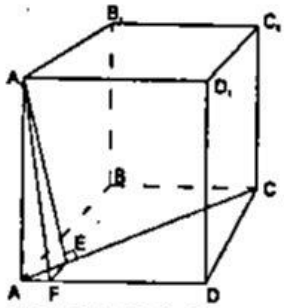
$EKUB(3a + b; a) = 2^2\cdot 7$

$\tau(EKUB(3a + b; a)) = (2 + 1)\cdot(1 + 1) = 6$.

Javob: 6.

18. Parallelepipedning yoqlari tomoni a va o'tkir burchagi 60° bo'lgan teng romblardan iborat. Parallelepiped hajmini toping.

Yechish:



$ABCDA_1B_1C_1D_1$ – parallelepiped. Yoqlari romb.

1) ABCD romb $S_{ABCD} = a^2\cdot\sin\alpha$

$\alpha = 60°$, $S_{ABCD} = \frac{\sqrt{3}a^2}{2}$.

2) $A_1E = H$, $A_1F \perp AD$, ΔA_1AF da

$AF = AA_1 \cdot \cos\alpha = a \cdot \frac{1}{2} = \frac{a}{2}$.

3) ΔAFE da $AF = AE \cdot \cos\frac{\alpha}{2}$

$AE = \frac{AF}{\cos\frac{\alpha}{2}} = \frac{\frac{a}{2}}{\cos 30^\circ} = \frac{a}{\sqrt{3}}$.

4) ΔA_1AE da

$H = \sqrt{AA_1^2 - AE^2} = \sqrt{a^2 - \left(\frac{a}{\sqrt{3}}\right)^2} =$

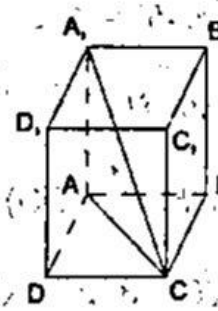
$= \sqrt{a^2 - \frac{a^2}{3}} = \frac{a\sqrt{2}}{\sqrt{3}}$.

5) $V = S_{ABCD} \cdot H = \frac{\sqrt{3}a^2}{2} \cdot \frac{a\sqrt{2}}{\sqrt{3}} = \frac{a^3\sqrt{2}}{2} = \frac{a^3}{\sqrt{2}}$.

Javob: $\frac{a^3}{\sqrt{2}}$.

19. To'g'ri parallelepiped diagonallari 9 sm va $\sqrt{33}$ sm ga teng. Asosining perimetri 18 sm ga teng. Yon qirrasi 4 sm ga teng. Parallelepiped to'la sirtini toping.

Yechish:



$ABCDA_1B_1C_1D_1$ to'g'ri parallelepiped

$B_1D = 9$ sm

$AC_1 = \sqrt{33}$ sm

$AA_1 = 4$ sm

$P = 18$ sm

$S_{to'la} = ?$ $V = ?$

1) $BD^2 = B_1D^2 - BB_1^2 = 9^2 - 4^2 = 65$

$BD = d_1 = \sqrt{65}$

$AC^2 = AC_1^2 - CC_1^2 = \sqrt{33}^2 - 4^2 = 17$

$AC = d_2 = \sqrt{17}$

2) $ABCD$ parallelogramm.

$AB = a$, $BC = b$

$2(a + b) = 18$, $a + b = 9$.

3) $2(a^2 + b^2) = d_1^2 + d_2^2$

$2(a^2 + b^2) = 65 + 17 = 82$

$a^2 + b^2 = 41$.

4) $\begin{cases} a + b = 9 \\ a^2 + b^2 = 41 \end{cases} \Rightarrow \begin{matrix} a = 5, a = 4 \\ b = 4, b = 5 \end{matrix}$

5) Parallelogramm o'tkir burchagini topamiz:

$d_2^2 = a^2 + b^2 - 2ab \cdot \cos\alpha$

$\cos\alpha = \frac{a^2 + b^2 - d_2^2}{2ab} = \frac{4^2 + 5^2 - (\sqrt{17})^2}{2 \cdot 4 \cdot 5} =$

$= \frac{16 + 25 - 17}{40} = \frac{24}{40} = \frac{3}{5}$

$\cos\alpha = \frac{3}{5} \Rightarrow \sin\alpha = \frac{4}{5}$.

6) $S_{asos} = a \cdot b \cdot \sin\alpha = 4 \cdot 5 \cdot \frac{4}{5} = 16$

$S_{to'la} = 2S_{asos} + S_{yon} = 2 \cdot 16 + 18 \cdot 4 = 104$.

Javob: $S_t = 104$.

20. **Qarang: 16-variant 2-savol (117-bet).**

21. $f^{-1}(x) = \sqrt[3]{x+4}$ bo'lsa $f(f(2))$ ni toping.

Yechish:

$f^{-1}(x) = \sqrt[3]{x+4} \Rightarrow x = \sqrt[3]{f(x)+4}$,

$x^3 = f(x) + 4$, $f(x) = x^3 - 4$

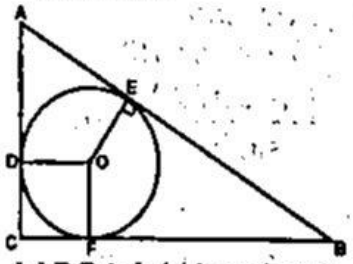
$f(f(2)) = (f(2))^3 - 4 = (2^3 - 4)^3 - 4 =$

$= 64 - 4 = 60$.

Javob: 60.

22. Perimetri 36 sm bo'lgan to'g'ri burchakli uchburchakka aylana ichki chizilgan. Aylananing urinish nuqtasi gipotenuzasi 2:3 nisbatda bo'ladi. Uchburchakning tomonlarini toping.

Yechish:



ΔABC to'g'ri burchakli,

$\angle C = 90^\circ$

$P = 36$ sm, $AE:EB = 2:3$.

Aylanaga bitta nuqtadan o'tkazilgan urinmalar teng. Shunga ko'ra $AE = AD$,

$CD = CF$, $BF = BE$, $AE = 2x$, $EB = 3x$,
$AB = 5x$, $CF = r$.
1) $P = 10x + 2r = 36$, $r + 5x = 18$
2) $(2x + r)^2 + (3x + r)^2 = 25x^2$
$13x^2 + 10xr + 2r^2 = 25x^2$
$-12x^2 + 10xr + 2r^2 = 0$, $r = 18 - 5x$
$6x^2 - 5xr - r^2 = 0$
$(6x + r)(x - r) = 0$
$r = -6x$, $x = r$
a) $r = -6x$ da $-6x + 5x = 18$, $x = -18$, Ø
b) $r = x$ da $x + 5x = 18$, $6x = 18$, $x = 3$
$r = 3$
$AB = 5x = 15$
$BC = 3x + r = 9 + 3 = 12$
$AC = 2x + r = 6 + 3 = 9$
9; 12; 15.

Javob: 12; 9; 15.

23. Qarang: 19-variant 10-savol (137-bet).

24. $\cos20° + \cos40° + \cos60° + \ldots + \cos160° + \cos180°$ yig'indisini hisoblang.

Yechish:
1) $\cos\alpha + \cos2\alpha + \cos3\alpha + \ldots + \cos n\alpha =$
$= \dfrac{\sin\frac{n\alpha}{2}\cdot\cos\frac{(n+1)\alpha}{2}}{\sin\frac{\alpha}{2}}$ formulaga asosan
yechamiz.
2) $\alpha = 20°$, $n = 9$
$\cos\alpha + \cos2\alpha + \ldots + \cos n\alpha =$
$= \dfrac{\sin\frac{9\cdot20°}{2}\cdot\cos\frac{10\cdot20°}{2}}{\sin\frac{20°}{2}} = \dfrac{\sin90°\cdot\cos100°}{\sin10°}.$
3) keltirish formulasiga asosan
$\cos100° = \cos(90° + 10°) = -\sin10°$
4) $\dfrac{\sin90°\cdot\cos100°}{\sin10°} = \dfrac{1\cdot(-\sin10°)}{\sin10°} = -1.$

Javob: –1.

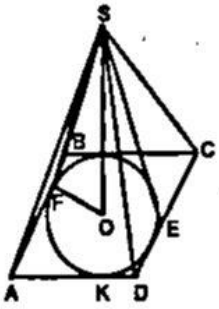
25. $x - 1$, $2x + 5$, $5x + 1$ ... arifmetik progressiya bo'lsa, birinchi 10 ta hadi yig'indisini toping.

Yechish:
1) $a_1 = x - 1$, $a_2 = 2x + 5$, $a_3 = 5x + 1$
Arifmetik progressiya xossasiga ko'ra
$2a_2 = a_1 + a_3$
$2(2x + 5) = x - 1 + 5x + 1$
$4x + 10 = 6x$, $2x = 10$, $x = 5$. Bundan $a_1 = 4$, $a_2 = 15$, $a_3 = 26$ ekanligi kelib chiqadi.
2) $d = a_2 - a_1 = 11$.
3) yig'indini topamiz: $S_{10} = \dfrac{2a_1 + 9d}{2}\cdot10$
$S_{10} = 5\cdot(2\cdot4 + 9\cdot11) = 5\cdot107 = 535.$

Javob: 535.

26. Piramida asosi tomoni $4\sqrt{3}$ va o'tkir burchagi 45° ga teng bo'lgan rombdan iborat. Ushbu piramidaga ichki chizilgan konusning yasovchisi bilan 60° li burchak tashkil etadi. Konusning hajmini toping.

Yechish:



$SABCD$ – piramida,
$ABCD$ – romb
$AB = 4\sqrt{3}$, $SO = H$,
$\angle BAD = 45°$
ΔSOF to'g'ri burchakli.
$\angle SFO = 60°$
$FO = \dfrac{h}{2}$,

$h = AB\cdot\sin45° = 4\sqrt{3}\cdot\dfrac{\sqrt{2}}{2} = 2\sqrt{6}$, $FO = \sqrt{6}$

$\dfrac{H}{FO} = tg60°$, $H = \sqrt{6}\cdot\sqrt{3} = 3\sqrt{2}$

$V_k = \dfrac{1}{3}\pi r^2 H = \dfrac{1}{3}\pi(FO)^2\cdot H =$

$= \dfrac{1}{3}\pi\cdot(\sqrt{6})^2\cdot3\sqrt{2} = 6\sqrt{2}\pi$

Javob: $6\sqrt{2}\pi$.

27. $y = x^2 - 6x + 7$ parabola va $y = -x^2 - 4x - 5$ parabola uchlaridan o'tuvchi to'g'ri chiziq tenglamasini tuzing.

Yechish:
$y = x^2 - 6x + 7$, $y = -x^2 - 4x - 5$.
1) $y = x^2 - 6x + 7$, $x_0 = -\dfrac{b}{2a} = \dfrac{6}{2} = 3$,
$y_0 = 9 - 18 + 7 = -2$.
$A(3; -2)$

2) $y = -x^2 - 4x - 5$,

$x_0 = \frac{-b}{2a} = \frac{-4}{2} = -2$,

$y_0 = -4 + 8 - 5 = -1$. $B(-2; -1)$

3) $A(3; -2)$, $B(-2; -1)$ nuqtalardan o'tuvchi to'g'ri chiziq tenglamasi tuzamiz.

$y = kx + b$.

$$\begin{cases} -2 = 3k + b \\ -1 = -2k + b \end{cases} \Rightarrow \begin{cases} k = -\frac{1}{5} \\ b = -\frac{7}{5} \end{cases}$$

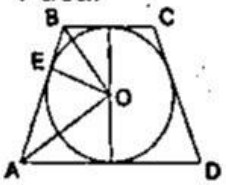
4) $y = -\frac{x}{5} - \frac{7}{5}$.

Javob: $-\frac{x}{5} - \frac{7}{5}$.

28. Teng yonli trapetsiyaga ichki chizilgan aylana markazidan trapetsiyaning yon tomonining uchlarigacha bo'lgan masofa mos ravishda 9 va 12 sm ga teng. Trapetsiya yuzasini toping.

Yechish:

I-usul



ABCD teng yonli trapetsiya.
AD + BC = AB + CD, chunki aylana ichki chizilgan

$BO = 9$, $AO = 12$

$S = ?$

1) $S = \frac{a+b}{2} \cdot h$, $AD = a$, $BC = b$, $h = 2r$.

ΔAOB to'g'ri burchakli

$OE = r = \frac{BO \cdot AO}{AB}$

$AB^2 = BO^2 + AO^2 = 9^2 + 12^2 = 15^2$

$AB = 15$.

$r = \frac{9 \cdot 12}{15} = \frac{36}{5} = 7{,}2$.

$h = 14{,}4$.

2) $(\frac{b}{2})^2 = 9^2 - 7{,}2 = (9 + 7{,}2)(9 - 7{,}2) = 16{,}2 \cdot 1{,}8$

$(\frac{b}{2}) = 5{,}4 \rightarrow 10{,}8$

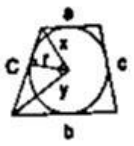
$(\frac{a}{2})^2 = 12^2 - 7{,}2^2 =$

$= (12 - 7{,}2)(12 + 7{,}2) = 4{,}8 \cdot 19{,}2$.

$(\frac{a}{2}) = 9{,}6 \rightarrow a = 19{,}2$

$S = \frac{10{,}8 + 19{,}2}{2} \cdot 14{,}4 = 216$

II-usul



$x = 9$
$y = 12$
$S_t - ?$

1) $a + b = 2c$, $c = \frac{a+b}{2}$

$r = \frac{xy}{c}$, $h = 2r$

2) $c^2 = x^2 + y^2 = 9^2 + 12^2 = 15^2$

$c = 15$

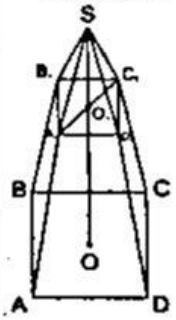
3) $r = \frac{9 \cdot 12}{15} = \frac{36}{5}$

4) $S = \frac{a+b}{2} \cdot h = c \cdot 2r = 2 \cdot 15 \cdot \frac{36}{5} = 2 \cdot 3 \cdot 36 = 216$.

Javob: 216.

29. To'g'ri burchakli muntazam piramidaning asosiga parallel bo'lgan va piramida balandligini 1:3 nisbatda bo'luvchi tekislik o'tkazildi. Hosil bo'lgan kesimning diagonali 3 ga teng bo'lsa, piramidaning asos tomonini toping.

Yechish:



SABCD muntazam to'rtburchakli piramida
$ABCD \| A_1B_1C_1D_1$
$A_1C_1 = 3$
$SO_1 : SO = 1 : 3$
$AB = ?$

1) $A_1C_1^2 = A_1D_1^2 + C_1D_1^2$

$A_1D_1 = a$

$2a^2 = 3^2$, $a = \frac{3}{\sqrt{2}}$

2) $SO_1 = x$, $OO_1 = 3x$, $SO = 4x$

3) ΔA_1SC_1 va ΔASC o'xshash.

$\frac{SO_1}{AC_1} = \frac{SO}{AC}$, $\frac{x}{3} = \frac{4x}{AC}$, $AC = 12$.

4) $AC^2 = AD^2 + CD^2$, $AD = b$

$12^2 = b^2 + b^2 = 2b^2$, $\sqrt{2}\,b = 12$, $b = \frac{12}{\sqrt{2}} = 6\sqrt{2}$.

Javob: $6\sqrt{2}$.

30. Silindr yon sirti 1 ga teng. Silindr balandligi 6 marta kattalashtirilsa, asosining radiusi esa 3 marta kichraytirilsa, ushbu silindr yon sirtini toping.

Yechish:

$S_{yon} = 1$

$H_1 = 6H$

$R_1 = \frac{R}{3}$

$S_1 = ?$

$S_{yon} = 2\pi RH = 1$

$S_1 = 2\pi R_1H_1 = 2\pi \cdot 6R \cdot \frac{H}{3} = 2\pi RH \cdot 2 =$

$= 1 \cdot 2 = 2.$

Javob: 2.

31. Qarang: 22-variant 32-savol (160-bet).

32. Qarang: 21-variant 36-savol (155-bet).

33. Qarang: 17-variant 35-savol (129-bet).

34. A="BIOS – ma'lumotlarni kiritish-chiqarish sistemasini kengaytirish modulidir." B="Shareware – qiymati 100% to'langandan keyin o'rnatilib, foydalaniladigan dasturiy ta'minot." C="Doppix dasturi ma'lumotlar omborini boshqarish sistemasidir." Shu mulohazalar asosida quyidagi mantiqiy ifodaning natijasini toping: ¬ (A ∨ (¬B ∧ C)

Yechish:

A="BIOS – ma'lumotlarni kiritish-chiqarish sistemasini kengaytirish modulidir." – rost (1);
B="Shareware – qiymati 100% to'langandan keyin o'rnatilib, foydalaniladigan dasturiy ta'minot." – yolg'on (0);
C="Doppix dasturi ma'lumotlar omborini boshqarish sistemasidir." – yolg'on (0).

$\neg(A \vee (\neg B \wedge C)) = \neg(1 \vee (\neg 0 \wedge 0)) = \neg(1 \vee (1 \wedge 0)) = \neg(1 \vee 0) = \neg\, 1 = 0$

Javob: yolg'on.

35. Fayl atributi nima?

Yechish:

Fayl atributi har bir fayl uchun o'rnatiladi va tizimga ushbu fayl bilan qanday operatsiyalar bajarish mumkinligi to'g'risida ma'lumot beradi. Fayllarning 4 xil atributi bo'ladi:

— только чтение (R) – faqat o'qish uchun;
— архивный (A) – arxivlangan;
— скрытый (H) – yashirilgan;
— системный (S) – tizimli.

Javob: faqat o'qish uchun, arxivlangan, yashirilgan, tizimli.

36. Qarang: 6-variant 32-savol (51-bet).