2017-yil matematika variant yechimlari (spectrum)
19-variant

Bizning kanal : @axborotnoma

Adminsratorlar hayati : @axborotnoma_bot

Matematika yordam guruhi : @axborotnomaguruhi
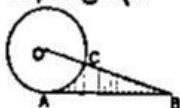
Reklama xizmati : @axborotnoma_reklama

19-variant

1. Qarang: 17-variant 13-savol (125-bet).

2. Qarang: 9-variant 12-savol (70-bet).

3. A nuqta urinish nuqtasi. $|OB| = 4$; $\angle ABO = 30°$ bo'lsa, bo'yalgan soha yuzini toping. ($\pi = 3$ deb olinsin).

Yechish:

$OA = OC = R$

$\angle ABO = 30°$, $|OB| = 4$

$\pi = 3$

$\angle OAB = 90°$, $\angle AOB = 60°$

$OA = \dfrac{OB}{2} = \dfrac{4}{2} = 2$, $AB = AO \cdot tg30° = 2\sqrt{3}$

$S_{ABO} = \dfrac{AO \cdot AB}{2} = \dfrac{2 \cdot 2\sqrt{3}}{2} = 2\sqrt{3}$

Bo'yalgan soha yuzini topish uchun uchburchak yuzidan AOC sektor yuzini ayirishimiz kerak

$S_{AOC} = \dfrac{\pi \cdot R^2 \alpha}{360°} = \dfrac{3 \cdot 2^2 \cdot 60°}{360°} = 2$

$S_{soha} = S_{ABO} - S_{AOC} = 2\sqrt{3} - 2$.

Javob: $2\sqrt{3} - 2$.

4. ABC uchburchak yuzasi 35 ga teng, DE esa AB tomonga parallel bo'lgan o'rta chizig'i CDE uchburchak yuzasini toping.
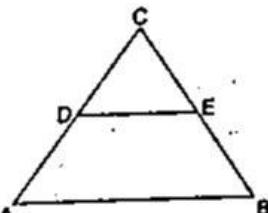
Yechish:

$S_{ABC} = 35$

$DE // AB$

$DE = \dfrac{AB}{2}$

$S_{CDE} = ?$

1) $\triangle ABC$ va $\triangle CDE$ o'xshash.
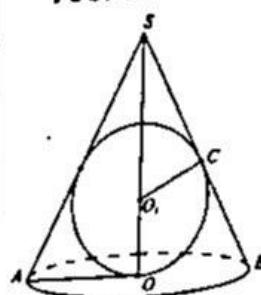
$\dfrac{S_{CDE}}{S_{ABC}} = \left(\dfrac{DE}{AB}\right)^2 = \left(\dfrac{\frac{AB}{2}}{AB}\right)^2 = \left(\dfrac{1}{2}\right)^2 = \dfrac{1}{4}$

2) $S_{CDE} = \dfrac{S_{ABC}}{4} = \dfrac{35}{4} = 8,75$ ...

Javob: 8,75.

5. Radiusi 6 sm, balandligi 8 sm bo'lgan konusga eng katta hajmga ega sfera ichki chizilgan. Sfera sirti yuzini toping.

Yechish:

$SO = 8$

$AO = 6$

$S_{sfera} = ?$

Uchburchak SAB ga ichki chzilgan aylana radiusi konusga ichki chizilgan sfera radiusi bo'ladi.

$O_1C = r$

$r = \dfrac{2S_{SAB}}{P}$

$P = SA + SB + AB$

$SA = \sqrt{SO^2 + AO^2} = \sqrt{8^2 + 6^2} = 10$

$P = 10 + 10 + 12 = 32$

$S_{SAB} = \dfrac{AB \cdot SO}{2} = \dfrac{2 \cdot 8}{2} = 48$

$r = \dfrac{2 \cdot 48}{32} = 3$

$S_{sfera} = 4\pi r^2 = 4\pi \cdot 3^2 = 36\pi$.

Javob: 36π.

6. Ifodani soddalashtiring:

$(\sin^4\alpha + \cos^4\alpha - \sin^6\alpha - \cos^6\alpha)^{\frac{1}{2}}$.

Yechish:

$(\sin^4\alpha + \cos^4\alpha - \sin^6\alpha - \cos^6\alpha)^{\frac{1}{2}} =$

$= (\sin^4\alpha - \sin^6\alpha + \cos^4\alpha - \cos^6\alpha)^{\frac{1}{2}} =$

$= (\sin^4\alpha(1 - \sin^2\alpha) + \cos^4\alpha(1 - \cos^2\alpha))^{\frac{1}{2}} =$

$(\sin^4\alpha \cdot \cos^2\alpha + \cos^4\alpha \cdot \sin^2\alpha)^{\frac{1}{2}} =$

$= (\sin^2\alpha \cos^2\alpha(\sin^2\alpha + \cos^2\alpha))^{\frac{1}{2}} =$

$= (\sin\alpha \cdot \cos\alpha)^{2 \cdot \frac{1}{2}} = \sin\alpha\cos\alpha = \dfrac{1}{2}\sin2\alpha$.

Javob: $\dfrac{1}{2}\sin2\alpha$.

7. Qarang: 10-variant 5-savol (75-bet).

8. Aylanadan tashqaridagi P nuqtadan aylanaga PB kesuvchi va PA urinmalar o'tkazilgan. PA kesma 2 ga, PC kesma esa 8 ga teng. Urinma va kesuvchi orasidagi burchak 60° ga teng bo'lsa, kesuvchi hosil qilgan eng kichik segment yuzasini toping.

Yechish:

PA – urinma
PC – kesuvchi
$PA = 4$
$PC = 8$
$\angle APC = 60°$
$S_{segment} = ?$

1) $AC^2 = PA^2 + PC^2 - 2PA \cdot PC \cdot \cos 60°$

$AC^2 = 4^2 + 8^2 - 2 \cdot 4 \cdot 8 \cdot \dfrac{1}{2} = 16 + 64 - 32 = 48.$

$AC = \sqrt{48}$

2) $\triangle CAP$ to'g'ri burchakli chunki
$PC^2 = PA^2 + AC^2$. Demak AC diametr

$AC = 2R = \sqrt{48}$

$R = 2\sqrt{3}$

3) $S_{segment} = S_{sektor} - S_{\triangle BOC}$
4) $\angle ACP = 30°$
$OC = OB, \ \angle COB = 120°$

5) $S_{sektor} = \dfrac{\pi \cdot (2\sqrt{3})^2 \cdot 120°}{360°} = \dfrac{\pi \cdot 12}{3} = 4\pi$

$S_{\triangle BOC} = \dfrac{R^2 \sin 120°}{2} = \dfrac{(2\sqrt{3})^2 \cdot \sqrt{3}}{4} = 3\sqrt{3}.$

6) $S_{segment} = 4\pi - 3\sqrt{3}.$

Javob: $4\pi - 3\sqrt{3}.$

9. Qarang: 6-variant 24-savol (49-bet).
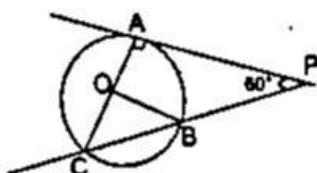
10. $y = \dfrac{x^3}{e^{0,5x}}$ funksiyaning o'sish oralig'ini toping.

Yechish:

Hosilani topamiz $y' = \left(\dfrac{x^3}{e^{0,5x}}\right)' =>$

$=> \dfrac{3x^2 \cdot e^{0,5x} - 0,5 \cdot e^{0,5x} \cdot x^3}{\left(e^{0,5x}\right)^2}$
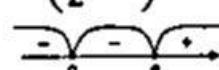
$y' \geq 0$ tengsizlikni yechib o'sish oraliqlarini topamiz.

$\dfrac{3x^2 \cdot e^{0,5x} - 0,5 \cdot x^3 e^{0,5x}}{\left(e^{0,5x}\right)^2} \geq 0$

$\dfrac{3x^2 - 0,5x^3}{e^{0,5x}} \geq 0, \ e^{0,5x} > 0$ bo'lganligi sababli

$3x^2 - 0,5x^3 \geq 0$ tengsizlikni yechamiz.

$x^2\left(\dfrac{x}{2} - 3\right) \leq 0.$

$x \in (-\infty; 6].$

Javob: $(-\infty; 6].$

11. $f(x) = \dfrac{3x^2 + 2}{x - 1}$ funksiya grafigining ordinata o'qi bilan kesishish nuqtasidan o'tuvchi urinma tenglamasini tuzing.

Yechish:

$y = \dfrac{3x^2 + 2}{x - 1}$ funksiyaning OY o'qi bilan kesishish nuqtasini topamiz. Bunda $x = 0$

$y = \dfrac{3 \cdot 0 + 2}{0 - 1} = -2$

Demak, $(0; -2)$ nuqtagan o'tuvchi urinma tenlamasini topishimiz kerak. Yrinma tenglamasi:
$y = f(x_0) + f'(x_0)(x - x_0)$

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

$\dfrac{6x^2 - 6x - 3x^2 + 2}{(x - 1)^2} = \dfrac{3x^2 - 6x + 2}{(x - 1)^2}$

$f'(x_0) = \dfrac{3 \cdot 0 - 6 \cdot 0 + 2}{(0 - 1)^2} = -2$

$y = -2 \cdot 2(x - 0) = -2x - 2.$

Javob: $-2x - 2.$

12. Ikkita shahar orasidagi masofa 80 km. Paroxod shu yo'lning ikkala tarafini 8 soat-u 20 minutda bosib o'tadi. Daryo oqim tezligi

http://bit.ly/Docufy

4 km/soat bo'lsa, paroxodning turg'un suvdagi tezligini toping.

Yechish:

$S = 80$ km

$t = 8\dfrac{1}{3}$ soat

$v_0 = 4\dfrac{km}{soat}$ — oqim tezligi

$v = ?$

Paroxodning oqim bo'yicha tezligi $v + 4\dfrac{km}{soat}$.

Oqimga qarshi tezligi $v - 4\dfrac{km}{soat}$.

$t = \dfrac{S}{v}$

$\dfrac{80}{v+4} + \dfrac{80}{v-4} = 8\dfrac{1}{3}$

$3 \cdot 80 \cdot (v - 4 + v + 4) = 25 \cdot (v^2 - 16)$

$48 \cdot 2v = 5(v^2 - 16)$

$5v^2 - 96v - 80 = 0$

$v = \dfrac{96 \pm \sqrt{96^2 + 4 \cdot 5 \cdot 80}}{2 \cdot 5} = \dfrac{96 \pm 104}{2 \cdot 5}$

$v = \dfrac{96 + 104}{10} = 20$

Javob: $20\dfrac{km}{soat}$

13. $\arcsin(3^x - 1) = \arccos 4^{\log_4(2 \cdot 3^x - 3)}$ tenglamaning eng kichik ildizini toping.

Yechish:

$\arcsin(3^x - 1) = \arccos 4^{\log_4(2 \cdot 3^x - 3)}$

1) $a^{\log_a b} = b$ ayniyatga asosan

$4^{\log_4(2 \cdot 3^x - 3)} = 2 \cdot 3^x - 3$

$\arcsin(3^x - 1) = \arccos(2 \cdot 3^x - 3)$

2) $\sin\arcsin(3^x - 1) = 3^x - 1$

$\sin\arccos(2 \cdot 3^x - 3) = \sqrt{1 - (2 \cdot 3^x - 3)^2}$

3) $3^x - 1 = \sqrt{1 - (2 \cdot 3^x - 3)^2}$

$3^x - 1 \geq 0, x \geq 0.$

$(3^x - 1)^2 = 1 - (2 \cdot 3^x - 3)^2, 3^x = a.$

$(a - 1)^2 = 1 - (2a - 3)^2$

$a^2 - 2a + 1 = 1 - 4a^2 + 12a - 9$

$5a^2 - 14a + 9 = 0, a = 1, a = \dfrac{9}{5}.$

4) $3^x = 1, x = 0.$

$3^x = \dfrac{9}{5}, x = \log_3 \dfrac{9}{5}.$

5) eng kichik ildizi $x = 0.$

Javob: 0.

14. Agar $f(x) = mx^2 - (m - 9)x - 2$ parabolaning simmetriy o'qi tenglamasi $x = -1$ bo'lsa, m ning qiymatini toping.

Yechish:

$f(x) = mx^2 - (m - 9)x - 2$

Simmetriya o'qi $x = -1$.

Simmetriya o'qi tenglamasi $x = -\dfrac{b}{2a}$.

$-1 = -\dfrac{-(m - 9)}{2m}$

$2m = -m + 9, 3m = 9, m = 3.$

Javob: 3.

15. To'g'ri burchakli uchburchakda gipotenuza va kichik katetning yig'indisi 27 ga teng. Agar katta katetning uzunligi $9\sqrt{3}$ ga teng bo'lsa, gipotenuza uzunligini toping.

Berilgan:

$\triangle ABC$ – to'g'ri burchakli uchburchak

$\angle C = 90°$

$AB = c$

$AC = b$

$BC = a$

$c + a = 27$

$b = 9\sqrt{3}$

$c = ?$

Yechish:

$c^2 = a^2 + b^2, a = 27 - c$

$c^2 = (27 - c)^2 + (9\sqrt{3})^2$

$(c - 27 + c)(c + 27 - c) = 81 \cdot 3$

$27 \cdot (2c - 27) = 81 \cdot 3$

$2c - 27 = 9,$

$2c = 36, c = 18.$

Javob: 18.

16. $\dfrac{\sqrt{x-2\sqrt{2}}}{\sqrt{x^2-4x\sqrt{2}+8}} \cdot \dfrac{\sqrt{x+2\sqrt{2}}}{\sqrt{x^2+4x\sqrt{2}+8}}$

ifodaning x = 3 dagi qiymatini toping.
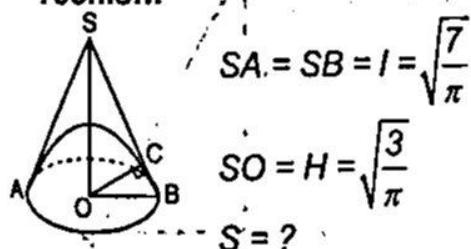
Yechish:

1) $\dfrac{\sqrt{x-2\sqrt{2}}}{\sqrt{x^2-4x\sqrt{2}+8}} - \dfrac{\sqrt{x+2\sqrt{2}}}{\sqrt{x^2+4x\sqrt{2}+8}} =$

$= \dfrac{\sqrt{x-2\sqrt{2}}}{\sqrt{\left(x-2\sqrt{2}\right)^2}} - \dfrac{\sqrt{x+2\sqrt{2}}}{\sqrt{\left(x+2\sqrt{2}\right)^2}} =$

$= \dfrac{1}{\sqrt{x-2\sqrt{2}}} - \dfrac{1}{\sqrt{x+2\sqrt{2}}}$

2) x = 3 da

$\dfrac{1}{\sqrt{3-2\sqrt{2}}} - \dfrac{1}{\sqrt{3+2\sqrt{2}}}$

$\sqrt{3\pm 2\sqrt{2}} = \sqrt{\left(\sqrt{2}\pm 1\right)^2} = \sqrt{2}\pm 1$

$\dfrac{1}{\sqrt{2}-1} - \dfrac{1}{\sqrt{2}+1} = \dfrac{\sqrt{2}+1-\sqrt{2}+1}{\left(\sqrt{2}-1\right)\left(\sqrt{2}+1\right)} = \dfrac{2}{1} = 2.$

Javob: 2.

17. Balandligi $\sqrt{\dfrac{3}{\pi}}$ ga, yasovchisi esa $\sqrt{\dfrac{7}{\pi}}$ ga teng bo'lgan konusga ichki yarimshar 34 asosida yotadi. Yarimsharning sirtini toping.

Yechish:

$SA = SB = l = \sqrt{\dfrac{7}{\pi}}$

$SO = H = \sqrt{\dfrac{3}{\pi}}$

$S = ?$

1) $S = \dfrac{1}{2}\cdot 4\pi r^2 = 2\pi r^2$

2) $\triangle SOB$ to'g'ri burchakli. OC gipotenuzaga tushirilgan balandlik: $OC = \dfrac{SO\cdot OB}{SB}$

3) OC = r yarim shar radiusi

$OB = \sqrt{SB^2 - SO^2} = \sqrt{\dfrac{7}{\pi} - \dfrac{3}{\pi}} = \dfrac{2}{\sqrt{\pi}}$

$r = \dfrac{\sqrt{\dfrac{3}{\pi}}\cdot \dfrac{2}{\sqrt{\pi}}}{\sqrt{\dfrac{7}{\pi}}} = \dfrac{2\sqrt{3}}{\sqrt{7\pi}}$

4) $S = 2\pi\left(\dfrac{2\sqrt{3}}{\sqrt{7\pi}}\right)^2 = 2\pi\cdot\dfrac{12}{7\pi} = \dfrac{24}{7} = 3\dfrac{3}{7}.$

Javob: $3\dfrac{3}{7}.$

18. Dastlabki o'n uchta natural sonlar yig'indisining kvadrati 8281 ga teng bo'lsa, shu sonlar kublarining yig'indisini toping.

Yechish:

$(1 + 2 + \ldots + 13)^2 = 8281$

$1^3 + 2^3 + \ldots + 13^3 = ?$

$1^3 + 2^3 + 3^3 + \ldots + n^3 = \left(\dfrac{n(n+1)}{2}\right)^2$

formulaga asosan yechamiz.

$1^3 + 2^3 + 3^3 + \ldots + 13^3 =$

$= \left(\dfrac{13(13+1)}{2}\right)^2 = (13\cdot 7)^2 = 91^2 = 8281.$

Javob: 8281.

19. Qarang: 11-variant 12-savol (84-bet).

20. Arifmetik progressiyada $a_3 + a_4 = 23$, $a_5 + a_4 = 37$ bo'lsa, a_8 ni toping.

Yechish:

$a_3 + a_4 = 23$, $a_5 + a_4 = 37$.

$a_3 + a_5 + 2a_4 = 23 + 37$,

$a_3 + a_5 = a_4 + a_4 = 2a_4$
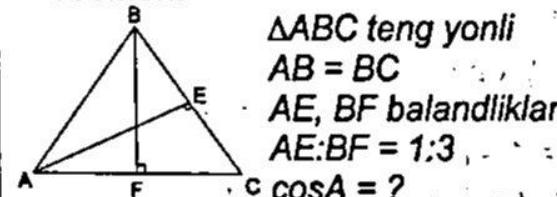
$4a_4 = 60$, $a_4 = 15$, $a_5 = 22$, $d = 7$

$a_8 = a_5 + 3d = 22 + 3\cdot 7 = 43.$

Javob: 43.

21. ABC uchburchakda AB = BC va balandliklar AE:BF = 1:3 nisbatda kesishadi. Uchburchak asosidagi burchak kosinusini toping.

Yechish:

$\triangle ABC$ teng yonli

AB = BC

AE, BF balandliklar

AE:BF = 1:3

cosA = ?

1) $AB = BC = a$, $AC = b$, $BF = h_b$, $AE = h_a$

2) $S = \dfrac{a \cdot h_a}{2} = \dfrac{b \cdot h_b}{2}$, $\dfrac{h_a}{h_b} = \dfrac{b}{a} = \dfrac{1}{3}$.

$3b = a$

3) $\triangle AFB$ da

$\cos A = \dfrac{AF}{AB} = \dfrac{\frac{b}{2}}{a} = \dfrac{b}{2a} = \dfrac{1}{2 \cdot 3} = \dfrac{1}{6}$

$\cos A = \dfrac{1}{6}$.
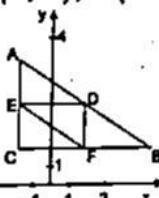
Javob: $\dfrac{1}{6}$.

22. Qarang: 7-variant 30-savol (58-bet).

23. D(1; 3), E(−1; 3) va F(1; 2) nuqtalar ABC uchburchak tomonlari o'rtalari bo'lsa, ABC uchburchak yuzini toping.

Yechish:

D(1; 3), E(−1; 3), F(1; 2)

$\triangle EDF$ to'gri burchakli $|ED| = 2$, $|DF| = 1$, ED, DF, EF $\triangle ABC$ ning o'rta chziqlari, bundan

$AC = 2DF = 2$; $CB = 2ED = 2 \cdot 2 = 4$.

$S_{ABC} = \dfrac{AC \cdot CB}{2} = \dfrac{2 \cdot 4}{2} = 4$.

Javob: 4.

24. Qarang: 14-variant 19-savol (108-bet).

25. Diagonali $4\sqrt{6}$ bo'lgan kub hajmining tola sirtiga nisbatini toping.

Yechish:

$D = 4\sqrt{6}$, $D = a\sqrt{3}$

$a\sqrt{3} = 4\sqrt{6}$,

$a = 4\sqrt{2}$

$V = a^3$, $S_{to'la} = 6a^2$,

$\dfrac{V}{S_{to'la}} = \dfrac{a^3}{6a^2} = \dfrac{a}{6} = \dfrac{4\sqrt{2}}{6} = \dfrac{2\sqrt{2}}{3}$.

Javob: $\dfrac{2\sqrt{2}}{3}$.

---

26. Qarang: 8-variant 20-savol (63-bet).

27. Agar $\dfrac{2^x + 12^x + 14^x}{5^x + 30^x + 35^x} = \dfrac{375}{24}$ bo'lsa, x ni toping.

Yechish:

1) $\dfrac{2^x + 2^x \cdot 6^x + 2^x \cdot 7^x}{5^x + 5^x \cdot 6^x + 5^x \cdot 7^x} = \dfrac{2^x(1 + 6^x + 7^x)}{5^x(1 + 6^x + 7^x)} =$

$= \dfrac{2^x}{5^x} = \left(\dfrac{2}{5}\right)^x$

2) $\left(\dfrac{2}{5}\right)^x = \dfrac{375}{24} = \dfrac{125}{8} = \left(\dfrac{5}{2}\right)^3$

$\left(\dfrac{2}{5}\right)^x = \left(\dfrac{2}{5}\right)^{-3}$,

$x = -3$.

Javob: −3.

28. $\vec{a}(1; 4)$ va $\vec{b}(-3; 2)$ vektorlar berilgan. $\vec{a} + \lambda\vec{b}$ vektori $\vec{a}$ vektoriga perpendikulyar bo'ladigan λ sonini toping.

Yechish:

$\vec{a}(1; 4)$, $\vec{b}(-3; 2)$, $(\vec{a} + \lambda\vec{b}) \perp \vec{a}$, $\lambda = ?$

1) $\vec{a} + \lambda\vec{b} \perp \vec{a} \Rightarrow (\vec{a} + \lambda\vec{b}) \cdot \vec{a} = 0$

2) $a^2 + \lambda ab = 0$

$a \cdot b = 1 \cdot (-3) + 4 \cdot 2 = -3 + 8 = 5$

$a^2 = 1^2 + 4^2 = 17$

$17 + 5\lambda = 0$,

$\lambda = -\dfrac{17}{5}$

Javob: $-\dfrac{17}{5}$

29. $\dfrac{3 \cdot 2^{2x-1}}{4^x - 9^x} > 3 + \left(\dfrac{4}{9}\right)^x$ tengsizlikni yeching.

Yechish:

1) $2^{2x-1} = 2^{2x} \cdot 2^{-1} = \dfrac{4^x}{2}$

2) $\dfrac{\frac{3}{2} \cdot 4^x}{4^x - 9^x} = \dfrac{1,5}{1 - \left(\dfrac{9}{4}\right)^x}$

3) $\left(\dfrac{9}{4}\right)^x = a$
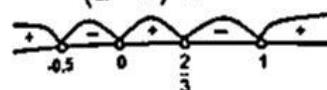
$\dfrac{1,5}{1-a} > 3 + \dfrac{1}{a}$

$\dfrac{1,5}{1-a} > \dfrac{3a+1}{a}, \quad \dfrac{1,5}{1-a} - \dfrac{3a+1}{a} > 0$

$\dfrac{1,5a - 3a - 1 + 3a^2 + a}{(1-a)\cdot a} > 0$

$\dfrac{3a^2 - 0,5a - 1}{(a-1)\cdot a} < 0$

$\dfrac{3\cdot(a+0,5)\left(a - \dfrac{2}{3}\right)}{(a-1)\cdot a} < 0$

$-0,5 < a < 0$ va $\dfrac{2}{3} < a < 1$

$-0,5 < \left(\dfrac{9}{4}\right)^x < 0 \qquad \varnothing$

$\dfrac{2}{3} < \left(\dfrac{9}{4}\right)^x < 1$

$\left(\dfrac{3}{2}\right)^{-1} < \left(\dfrac{9}{4}\right)^x < 1$

$\left(\dfrac{3}{2}\right)^{-1} < \left(\dfrac{9}{4}\right)^x < \left(\dfrac{3}{2}\right)^0$

$\left(\dfrac{3}{2}\right)^{-1} < \left(\dfrac{3}{2}\right)^{2x} < \left(\dfrac{3}{2}\right)^0$

$-1 < 2x < 0, \quad -\dfrac{1}{2} < x < 0,$

$(-0,5; 0).$

Javob: (–0,5; 0).

30. Prizma yon yoqlari va qirralari yig'indisi 998 bo'lsa, uchlari sonini toping.

Yechish:
Prizmadagi YY – yon yoqlasi soni,
Q – qirralari soni bo'lsa, YY + Q = 998
n – burchakli prizma qirraari soni 3n ga teng, ya'ni Q = 3n, YY = n + 2
Demak, 3n + n + 2 = 998
4n = 996 ⇒
n = 249
Uchlar soni 2·n = 2·249 = 498.

Javob: 498.

31. Paskal tilida yozilgan dastur natijasini aniqlang.
Var N. k: byte; A: array [1..9] of byte;
Begin Randomize;
A[1]:=Random(I); N:=Random(I)-P5;
For k:=2 To N Do A[k]:=k-1+A[k-1]:
For k:=1 To N Do Write(A[k], ' '); readln; End.

Yechish:
Paskal tilida yozilgan dasturda ishlatiladigan barcha o'zgarmaslar va o'zgaruvchilar e'lon qilinishi kerak. Aks holda kompilyator "Unknown identifier" – "Noma'lum identifikator" degan xatoni beradi. O'zgarmaslar "Const", o'zgaruvchilar esa "Var" maxsus so'zlardan keyin e'lon qilinadi.
Umuman olganda, barcha identifikatorlar "Begin" so'zidan oldin e'lon qilinishi shart.
Dasturda P5 identifikatori e'lon qilinmagan. Dastur ishga tushirilganda "Unknown identifier" degan xatolik xabari chiqadi.

Javob: dastur ishga tushirilganda xatolik xabari chiqadi.

32. Ushbu o'zgarmaslar ichidan to'g'ri yozilganini aniqlang:

Yechish:
O'zgarmas son ikki xil ko'rinishda taqdim etilishi mumkin:
1) Turg'un nuqtali.
2) Suzuvchi nuqtali.

Turg'un nuqtali son o'nli kasr ko'rinishida beriladi. Kasr qismi butun qismidan nuqta orqali ajratiladi. Masalan: 19.56; 0.05; -376.18.

Matematikada ishlatiladigan o'nli vergul o'rnida o'nli nuqtadan foydalaniladi!

Juda katta va juda kichik sonlarni matematikada daraja orqali, ya'ni qiymatli raqamlarni 10 ning darajasiga ko'paytmasi ko'rinishida ifodalash odat tusiga kiritilgan.

Paskalda bunday yozuv suzuvchi nuqtali yozuv deyiladi. Suzuvchi nuqtali son mEp ko'rinishida yozilib, bu yerda m – sonning mantissasi, p – sonning darajasi hisoblanadi.

Javob: 92624E-2.

33. Microsoft Excel 2003 dasturida A1 = 10, A2 = 15, A3 = 2,
A4=ЕСЛИ(КОРЕНЬ(A3)>A2–A1; СРЗНАЧ(A1:A2); СРЗНАЧ(A1:A3)) bo'lsa,
A4 katakchadagi formula natijasini aniqlang.

Yechish:

Argumentlar A1 = 10, A2 = 15, A3 = 2 ga teng. A4=ЕСЛИ(КОРЕНЬ(A3)>A2–A1; СРЗНАЧ(A1:A2); СРЗНАЧ(A1:A3)), A4 katakchadagi formulani tahlilqilamiz.

Agar $\sqrt{A3} > A2 - A1$ bo'lsa, u holda $A4 = \dfrac{A1+A2}{2}$, aks holda $A4 = \dfrac{A1+A2+A3}{3}$ bo'ladi.

Qiymatlarni qo'yib chiqsak:

Agar $\sqrt{2} > 15 - 10$ bo'lsa, u holda $A4 = \dfrac{10+15}{2}$, aks holda $A4 = \dfrac{10+15+2}{3}$ bo'ladi.

$\sqrt{2} > 15 - 10 \rightarrow \sqrt{2} > 5$ *shart bajarilmayapti, demak* $A4 = \dfrac{10+15+2}{3} = \dfrac{27}{3} = 9$.

Javob: 9.

34. HTML hujjatning tanasi qanday teg orqali aks ettiriladi?

Yechish:

HTML-hujjati tuzilishini quyidagi tarzda tasavvur qilish mumkin:

```
<html>
<head>
% hujjat mavzusi %
</head>
<body>
% brauzer oynasida namoyon bo'ladigan hujjat tanasi %
</body>
</html>
```

Javob: <body>.....</body>.

35. MS Excel. =?(-23;6)-ЗНАЧЕН)(ЗАМЕНИТЬ (??(-23;6);2;2;6)) formulaning natijasi 67 bo'lishi uchun ? va ?? belgilarining o'rniga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.

Javob: Остат, Сцепить.

36. A1 = -7, B1 = 8, B2 = 4 bo'lsin. Quyidagi formula natijasi -23 ga teng bo'lishi uchun A2 katakka kiritilishi kerak bo'lgan qiymatni aniqlang.
=ЕСЛИ(ИЛИ(A1+B2<=A2*B1; A1*B1>0); A1*B2+B1-A2; A1*B1+B2+A2)

Yechish:

A1 = -7, B1 = 8, B2 = 4.

=ЕСЛИ(ИЛИ(A1+B2<=A2*B1; A1*B1>0); A1*B2+B1-A2; A1*B1+B2+A2) funksiyani tahlil qilamiz:

ЕСЛИ(ИЛИ(A1+B2<=A2*B1; A1*B1>0); A1*B2+B1-A2; A1*B1+B2+A2)=-23

Agar(A1+B2<=A2*B1) yoki (A1*B1>0) bo'lsa, u holda A1*B2+B1-A2; aks holda A1*B1+B2+A2=-23.

Yacheyka manzillari o'rniga qiymatlarni qo'yib chiqsak,

Agar(-7+4<=A2*8) yoki (-7*8>0) bo'lsa, u holda -7*4+8-A2; aks holda -7*8+4+A2=23.

Agar(-3<=A2*8) yoki (-56>0) bo'lsa, u holda -20-A2; aks holda -52+A2=23.

(-3<=A2*8) rost bo'lsa, -20-A2=23 bo'lishi kerak, aks holda -52+A2=23 bo'ladi.

Ikkala tenglamani yechib, topilgan A2 qiymatlarini shartimizga qo'yib tekshiramiz. Birinchi tenglama ildizi shartni qanoatlantirishi yoki ikkinchi tenglama ildizi qanoatlantirmasligi kerak. Agar:

1) -20-A2=-23 dan A2=3 ekanligini topamiz va uning qiymatini -3<=A2*8 tengsizlikka qo'yib topamiz: 3<=3/8 – shart bajarilayapti.

Xuddi shunday qilib ikkinchi tenglama ildizini tekshiramiz:

2) -52+A2=-23

A2=29

-3<=A2*8 → -3<=29*8 → -3<=600 – yana shart bajarilayapti.

Demak, birinchi tenglamamiz ildizi 3 ni A2 yacheykaga kiritish lozim.

Javob: 3.