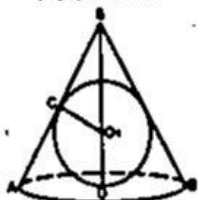


9-variant

1. Konus uchidan unga ichki chizilgan shar markazigacha masofa 1 ga, konus yasovchisi esa 3 ga teng. Konus yasovchisi va asos tekisligi orasidagi burchakning tangensini toping.

Berilgan:
 $SA = SB = 3$
 $AB = a, SO_1 = 1$
 $SO = 1 + O_1O$
 $O_1C = O_1O = r$
 $tg \angle SAB = ?$

Yechish:



$O_1C = r$ uchburchak ASB ga ichki chizilgan aylana radiusi.

$$r = \frac{2 \cdot SO \cdot AB}{2SA + AB} = \frac{(1+r) \cdot a}{2 \cdot 3 + a}$$

$$6r + ra = a + ra, a = 6r$$

$$SA^2 = SO^2 + AO^2$$

$$3^2 = (1+r)^2 + (3r)^2$$

$$10r^2 + 2r - 8 = 0$$

$$5r^2 + r - 4 = 0, r = -1 \emptyset$$

$$r = \frac{4}{5}, a = \frac{24}{5}$$

$$tg \angle SAB = \frac{1+r}{\frac{a}{2}} = \frac{2 \cdot \left(1 + \frac{4}{5}\right)}{\frac{24}{5}} = \frac{3}{4}$$

Javob: $\frac{3}{4}$

2. $27^{\frac{2}{3}(x-2)} + 3^4 - 3^{2(x-1)} < 73$ tengsizlikni yeching.

Yechish:

$$1) 27^{\frac{2}{3}(x-2)} = 3^{3 \cdot \frac{2}{3}(x-2)} = 3^{2(x-2)}$$

$$2) 3^{2(x-2)} - 3^{2(x-1)} < 73 - 3^4$$

$$3^{2(x-2)}(1 - 3^2) < 73 - 81$$

$$3^{2(x-2)} \cdot (-8) < -8$$

$$3^{2(x-2)} > 1$$

$$3^{2(x-2)} > 3^0, 2(x-2) > 0, x-2 > 0, x > 2.$$

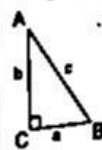
$$x \in (2; +\infty).$$

Javob: $(2; +\infty)$.

3. Gipotenuzasi C ga teng bo'lgan to'g'ri burchakli uchburchakning katetlari yig'indisining eng katta qiymatini toping.

Yechish:

$\triangle ABC$ to'g'ri burchakli
 $\angle C = 90^\circ, c$
 $a + b \rightarrow \max$



1) Pifagor teoremasiga ko'ra $c = \sqrt{a^2 + b^2}$

$$a = \sqrt{c^2 - b^2}$$

2) $\sqrt{c^2 - b^2} + b$ ifodaning hosilasini topamiz

$$\frac{-2b}{2\sqrt{c^2 - b^2}} + 1$$

$$3) \frac{-2b}{2\sqrt{c^2 - b^2}} + 1 = 0$$

$$2b = 2\sqrt{c^2 - b^2}$$

$$b^2 = c^2 - b^2, c^2 = 2b^2, b = \frac{c}{\sqrt{2}}$$

$$4) a = \sqrt{c^2 - b^2} = \sqrt{c^2 - \frac{c^2}{2}} = \frac{c}{\sqrt{2}}$$

$$5) a + b = \frac{c}{\sqrt{2}} + \frac{c}{\sqrt{2}} = \frac{2c}{\sqrt{2}} = \sqrt{2}c.$$

Javob: $\sqrt{2}c$.

4. k ning qanday qiymatida $\vec{a}(1; k; -3)$ va $\vec{b}(k; -3; -1)$ vektorlar perpendikulyar bo'ladi?

Yechish:

Ikki vektor \vec{a} va \vec{b} perpendikulyar bo'lishi uchun ularning skalyar ko'paytmasi nolga teng bo'lishi kerak.

$$\vec{a} \cdot \vec{b} = 0 \text{ yoki } a_1 b_1 + a_2 b_2 + a_3 b_3 = 0$$

$$\vec{a}(1; k; -3), \vec{b}(k; -3; -1)$$

$$a \cdot b = k - 3k + 3 = 0$$

$$-2k + 3 = 0$$

$$k = \frac{3}{2} = 1,5.$$

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

5. Natural n sonning kvadrati 3 ga bo'linganda nechta qoldiq hosil bo'lishi mumkin?

Yechish:

Natural n sonning kvadrati 3 ga bo'linganda qoladigan qoldiqlarni hisoblaymiz. n sonning kvadratini 3 ga bo'lsak, qoldiqlar 1 va 2 chiqadi. Demak, 2 ta qoldiq qoladi.

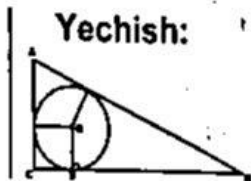
Javob: 2.

6. Perimetri 58 ga teng bo'lgan to'g'ri burchakli uchburchak radiusi 5 ga teng bo'lgan aylanaga tashqi chizilgan. Gipotenuza uzunligini toping.

Berilgan:

$P = 58$
 $OD = r = 5$
 $c = ?$

Yechish:



1) to'g'ri burchakli uchburchakka ichki chizilgan aylana radiusi $r = \frac{a+b-c}{2}$

2) $a + b + c = 58, a + b = 58 - c$

3) $5 = \frac{a+b-c}{2}, a+b = 10+c$

4) $10+c = 58-c, 2c = 48, c = 24.$

Javob: 24.

7. $k \in \mathbb{N}$ da $A_k = x^k + y^k$ darajali yig'indi, $\sigma_1 = x + y, \sigma_2 = xy$ bo'lsa, u holda quyidagi qaysi munosabat doim o'rinli?

Yechish:

1) $A_1 = x + y = \sigma_1, A_0 = 2$

2) $A_2 = x^2 + y^2 = (x + y)^2 - 2xy = \sigma_1^2 - 2\sigma_2 = A_1\sigma_1 - A_0\sigma_2$

$A_3 = x^3 + y^3 = (x^2 + y^2)(x + y) - (x + y) \cdot xy = A_2\sigma_1 - A_1\sigma_2$

3) $A_{n+1} = A_n\sigma_1 - A_{n-1}\sigma_2$

Javob: $A_{n+1} = A_n\sigma_1 - A_{n-1}\sigma_2$

8. $\sqrt{32} \cos^2 \frac{\pi}{8} - \sqrt{8}$ ifodaning qiymatini toping.

Yechish:

$\sqrt{32} \cos^2 \frac{\pi}{8} - \sqrt{8}$

1) darajani pasaytirish formulasiga asosan:

$\cos^2 \frac{\pi}{8} = \frac{1 + \cos 2 \cdot \frac{\pi}{8}}{2} = \dots$

$= \frac{1 + \cos \frac{\pi}{4}}{2} = \frac{1 + \frac{\sqrt{2}}{2}}{2} = \frac{2 + \sqrt{2}}{4}$

2) $\sqrt{32} \cdot \frac{2 + \sqrt{2}}{4} - \sqrt{8} =$

$= 4\sqrt{2} \cdot \frac{2 + \sqrt{2}}{4} - 2\sqrt{2} = 2\sqrt{2} + 2 - 2\sqrt{2} = 2$

Javob: 2.

9. Taqqoslang: $a = 40^{15}$ va $b = 25^{15} + 15^{15}$.

Yechish:

1) $40^{15} = (25 + 15)^{15}$

Nyuton binomiga asosan

$(25 + 15)^{15} = 25^{15} + 15 \cdot 25^{14} \cdot 15 + \dots +$

$+ 15 \cdot 25^{14} + 15^{15}$

$a = b + 15 \cdot 25^{14} \cdot 15 + \dots + 15 \cdot 25 \cdot 15^{14}$

$a > b.$

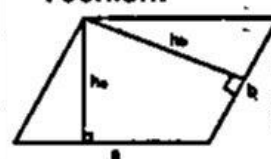
Javob: $a > b.$

10. Parallelogrammning ikkita balandligi mos ravishda 6 va 9 ga teng. Perimetri 60 ga teng. Parallelogrammning o'tkir burchagini toping.

Berilgan:

$h_a = 6$
 $h_b = 9$
 $P = 60$
 $\alpha = ?$

Yechish:



1) $P = 2(a + b) = 60, a + b = 30$

2) $a \cdot h_a = b \cdot h_b$

$6a = 9b, a = 1,5b$

3) $1,5b + b = 30$

$2,5b = 30, b = 12, a = 18$

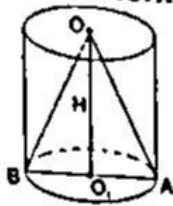
4) $S = a \cdot h_a = ab \sin \alpha$

$\sin \alpha = \frac{h_a}{b} = \frac{6}{12} = \frac{1}{2}, \alpha = 30^\circ$

Javob: 30° .

11. Silindr va konus umumiy asosga va balandlikka ega. Konus hajmi 84 ga teng. Silindr hajmini toping.

Yechish:



$$\begin{aligned} OO_1 &= H \\ AO_1 &= R \\ V_k &= 84 \\ V &= ? \end{aligned}$$

$$1) V_k = \frac{1}{3} \pi R^2 H$$

$$\frac{1}{3} \pi R^2 H = 84. \pi R^2 H = 252.$$

$$2) V = \pi R^2 H = 252.$$

Javob: 252.

12. $f(x^2 + 3x + 5) = x^2 + 2x + 10$ bo'lsa, $f^{-1}(9)$ ni toping.

Yechish:

$$f(x^2 + 3x + 5) = x^2 + 2x + 10$$

$$1) f^{-1}(f(x^2 + 3x + 5)) = f^{-1}(x^2 + 2x + 10)$$

$$f^{-1}(x^2 + 2x + 10) = x^2 + 3x + 5$$

2) $f^{-1}(9)$ ni topish kerak, demak

$$x^2 + 2x + 10 = 9 \text{ bo'lish kerak.}$$

$$x^2 + 2x + 1 = 0, (x + 1)^2 = 0, x = -1$$

$$3) x = -1$$

$$f^{-1}((-1)^2 + 2(-1) + 10) = (-1)^2 + 3(-1) + 5$$

$$f^{-1}(9) = 3.$$

Javob: $f^{-1}(9) = 3$.

13. Qarang: 5-variant 14-savol (39-bet).

14. $a^2 < 99$ tengsizlikni qanoatlantiruvchi eng katta natural sonning natural bo'luvchilari yig'indisini toping.

Yechish:

$$a^2 < 99 \text{ tengsizlikni oraliqlar usulida yechamiz.}$$

$$a^2 - 99 < 0$$

$$(a - 3\sqrt{11})(a + 3\sqrt{11}) < 0$$

$$-3\sqrt{11} < a < 3\sqrt{11}$$

Oraliqqa tegishli eng katta natural son 9.

9 ning natural bo'luvchilari 1, 3, 9.

$$1 + 3 + 9 = 13.$$

Javob: 13.

15. Agar $\vec{a}(-1; 3; 5)$ va $\vec{b}(2; -3; 1)$ bo'lib, $\vec{c} = 3\vec{a} - 2\vec{b}$ bo'lsa, \vec{a} va \vec{c} vektorlarning skalyar ko'paytmasini toping.

Yechish:

$$\vec{a}(-1; 3; 5), \vec{b}(2; -3; 1), \vec{c} = 3\vec{a} - 2\vec{b}$$

$$\vec{a} \cdot \vec{c} = ?$$

$$1) 3\vec{a} = (-3; 9; 15)$$

$$2) 2\vec{b} = (4; -6; 2)$$

$$3) \vec{c} = (-7; 15; 13)$$

$$4) \vec{a} \cdot \vec{c} = 7 + 45 + 65 = 117.$$

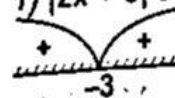
Javob: 117.

$$16. \frac{|2x+6|}{x^2-16} < 0 \text{ tengsizlikning butun}$$

yechimlari yig'indisini toping.

Yechish:

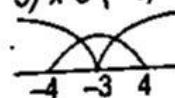
$$1) |2x+6| \text{ doimo musbat.}$$



$$2) x^2 - 16 < 0, (x-4)(x+4) < 0$$

$$x \in (-4; 4)$$

$$3) x \in (-4; -3) \cup (-3; 4)$$



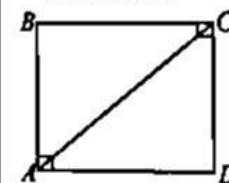
$$4) \text{ butun yechimlari yig'indisi}$$

$$-2 - 1 + 0 + 1 + 2 + 3 = 3.$$

Javob: 3.

17. Tomonlari 12 va 14 ga teng bo'lgan to'g'ri to'rtburchak birlik kvadratchalarga bo'lingan. Uning diagonalini birlik kvadratchalarning uchlari bo'lmish nuqtalarning nechtasidan o'tadi?

Yechish:



$$a = 12, b = 14$$

ABCD - to'g'ri to'rtburchak

$$AB = 12, BC = 14$$

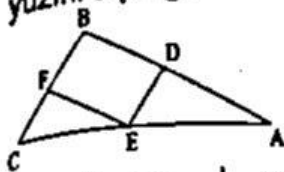
BD - diagonal

BD diagonal kichik kvadratchalarning

2 tasining uchi bo'lishi mumkin.

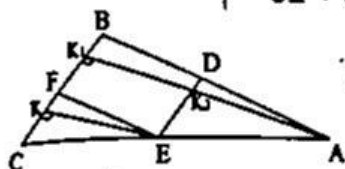
Javob: 2.

18. Rasmda ABC uchburchak berilgan. Agar $DE \parallel BC$ va $EF \parallel AB$ bo'lib, $S_{ADE} = 32$, $S_{EFC} = 30$ bo'lsa, BDEF to'rtburchakning yuzini toping.



Berilgan:
 ABC –
 uchburchak
 $DE \parallel BC$
 $FE \parallel AB$
 $S_{ADE} = 32$
 $S_{EFC} = 30$
 $S_{BDEF} = ?$

Yechish:
 1) $AK_1 = H = AK_2 + EK = h_2 + h_1$
 $\frac{y \cdot h_1}{2} = 30$
 $BF = DE = x, CF = y$
 2) ΔABC yuzi
 $S_{ABC} = \frac{1}{2}(x+y) \cdot (h_1 + h_2) = 30 + 32 + S_1 = 62 + S_1$



$$3) \left(\frac{x}{y}\right)^2 = \frac{32}{30}, \frac{x}{y} = \frac{4}{\sqrt{15}}, x = \frac{4}{\sqrt{15}}y$$

$$\frac{h_2}{h_1} = \frac{4}{\sqrt{15}}, h_2 = \frac{4}{\sqrt{15}}h_1$$

$$4) \frac{1}{2} \left(\frac{4 + \sqrt{15}}{\sqrt{15}}y\right) \cdot \left(\frac{4 + \sqrt{15}}{\sqrt{15}}\right)h_1 = \frac{(4 + \sqrt{15})^2}{2 \cdot 15} \cdot 60 = (4 + \sqrt{15})^2 \cdot 2$$

$$5) (31 + 8\sqrt{15}) \cdot 2 = 62 + S_1$$

$$S_1 = 16\sqrt{15}$$

Javob: $16\sqrt{15}$.

19. $\text{tg}2\alpha - \text{tg}\alpha$ ni hisoblang.

Yechish:

$$\text{tg}2\alpha - \text{tg}\alpha = \frac{\sin 2\alpha}{\cos 2\alpha} - \frac{\sin \alpha}{\cos \alpha} = \frac{\sin 2\alpha \cdot \cos \alpha - \cos 2\alpha \cdot \sin \alpha}{\cos 2\alpha \cdot \cos \alpha}$$

$$= \frac{\sin(2\alpha - \alpha)}{\cos 2\alpha \cdot \cos \alpha} = \frac{\sin \alpha}{\cos 2\alpha \cdot \cos \alpha} = \frac{\text{tg}\alpha}{\cos 2\alpha}$$

Javob: $\frac{\text{tg}\alpha}{\cos 2\alpha}$.

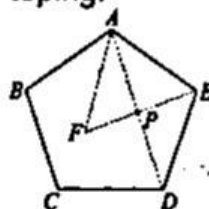
20. Qarang: 7-variant 27-savol (57-bet).

21. $\int e^{\cos x} \cdot \sin x dx$ integralni hisoblang.

Yechish:
 $\int e^{\cos x} \cdot \sin x dx = -\int e^{\cos x} d(\cos x) = -e^{\cos x} + C$

Javob: $-e^{\cos x} + C$.

22. ABCDE – muntazam beshburchak. AEF – muntazam uchburchak. $\angle APE$ ni toping.



Yechish:
 ABCDE muntazam beshburchak.
 Beshburchakning har bir ichki burchagi 108° dan.

1) ΔAEF muntazam – $\angle A = \angle E = \angle F = 60^\circ$
 2) ΔAED teng yonli – $\angle A = \angle D = \frac{180^\circ - 108^\circ}{2} = 36^\circ$

3) ΔAEP da $\angle A = 36^\circ, \angle E = 60^\circ, \angle P = 180^\circ - 60^\circ - 36^\circ = 84^\circ$
 $\angle APE = 84^\circ$.

Javob: 84° .

23. a va b natural sonlarning eng katta umumiy bo'luvchisi 4 ga teng bo'lsa, $2a + b$ va a sonlarning eng katta umumiy bo'luvchisi nechaga teng?

Yechish:
 $EKUB(a; b) = 4, EKUB(2a + b; a) = ?$
 Masalan, $a = 4 \cdot 3, b = 4 \cdot 5$
 $EKUB(a; b) = 4$
 $2a + b = 2 \cdot 4 \cdot 3 + 4 \cdot 5 = 4 \cdot 11$
 $EKUB(2a + b; a) = 4$

Javob: 4.

24. $\sin \alpha + \cos \alpha = \sqrt{\frac{3}{2}}$ bo'lsa,
 $\sin^6 \alpha + \cos^6 \alpha$ ning qiymatini toping.

Yechish:

1) $\sin \alpha + \cos \alpha = \sqrt{\frac{3}{2}}$ dan $\sin 2\alpha$ ning qiymatini topamiz.

$$(\sin \alpha + \cos \alpha)^2 = \left(\sqrt{\frac{3}{2}}\right)^2$$

$$\sin^2 \alpha + 2\sin \alpha \cos \alpha + \cos^2 \alpha = \frac{3}{2}$$

$$\sin 2\alpha = \frac{1}{2}$$

$$\begin{aligned} 2) \sin^6 \alpha + \cos^6 \alpha &= (\sin^2 \alpha)^3 + (\cos^2 \alpha)^3 = \\ &= (\sin^2 \alpha + \cos^2 \alpha) \cdot (\sin^4 \alpha - \sin^2 \alpha \cos^2 \alpha + \cos^4 \alpha) = \\ &= (\sin^2 \alpha + \cos^2 \alpha)^2 - 3 \cdot \sin^2 \alpha \cos^2 \alpha = \\ &= 1 - \frac{3}{4} \sin^2 2\alpha = 1 - \frac{3}{4} \cdot \left(\frac{1}{2}\right)^2 = 1 - \frac{3}{16} = \frac{13}{16} \end{aligned}$$

Javob: $\frac{13}{16}$.

25. $\sqrt{48} - \sqrt{192} \cdot \sin^2 \frac{19\pi}{12}$ ifodaning qiymatini toping.

Yechish:

$$1) \sin \frac{9\pi}{12} = \sin \frac{3\pi}{4} = \frac{\sqrt{2}}{2}$$

$$2) \sqrt{48} = \sqrt{16 \cdot 3} = 4\sqrt{3}$$

$$3) \sqrt{192} = \sqrt{64 \cdot 3} = 8\sqrt{3}$$

$$\begin{aligned} 4) 4\sqrt{3} - 8\sqrt{3} \cdot \left(\frac{\sqrt{2}}{2}\right)^2 &= \\ &= 4\sqrt{3} - 8\sqrt{3} \cdot \frac{1}{2} = 4\sqrt{3} - 4\sqrt{3} = 0. \end{aligned}$$

Javob: 0.

26. Ifodani soddalashtiring:
 $(\sin \alpha + \cos \alpha)^4 - 4\sin^2 \alpha \cos^2 \alpha - 1$.

Yechish:

Qisqa ko'paytirish formulasidan foydalanib yechamiz:

$$\begin{aligned} 1) \sin \alpha &= a, \cos \alpha = b. \\ (a+b)^4 - 4a^2b^2 - 1 &= (a+b)^4 - (2ab)^2 - 1 = \\ &= ((a+b)^2 - 2ab)((a+b)^2 + 2ab) - 1 = \\ &= (a^2 + b^2 - 2ab)(a^2 + b^2 + 2ab) - 1 = \\ &= (a^2 + b^2 - 2ab)(a^2 + b^2 + 4ab) - 1 = \\ 2) (\sin^2 \alpha + \cos^2 \alpha)(\sin^2 \alpha + \cos^2 \alpha + & \\ + 4\sin \alpha \cos \alpha) - 1 &= 1 + 2\sin 2\alpha - 1 = 2\sin 2\alpha. \end{aligned}$$

Javob: $2\sin 2\alpha$.

27. Hisoblang: $\sin 395^\circ \cdot \sin 505^\circ + \cos 575^\circ \cdot \cos 865^\circ + \operatorname{tg} 606^\circ \cdot \operatorname{tg} 1104^\circ$.

Yechish:

Keltirish formulasidan foydalanib yechamiz.

$$1) \sin 395^\circ = \sin(360^\circ + 35^\circ) = \sin 35^\circ$$

$$\sin 505^\circ = \sin(540^\circ - 35^\circ) = \sin 35^\circ$$

$$\cos 575^\circ = \cos(540^\circ + 35^\circ) = -\cos 35^\circ$$

$$\cos 865^\circ = \cos(900^\circ - 35^\circ) = -\cos 35^\circ$$

$$\operatorname{tg} 606^\circ = \operatorname{tg}(630^\circ - 24^\circ) = \operatorname{ctg} 24^\circ$$

$$\operatorname{tg} 1104^\circ = \operatorname{tg}(1080^\circ + 24^\circ) = \operatorname{tg} 24^\circ$$

$$2) \sin 35^\circ \cdot \sin 35^\circ + (-\cos 35^\circ) \cdot (-\cos 35^\circ) +$$

$$\operatorname{ctg} 24^\circ \cdot \operatorname{tg} 24^\circ$$

$$\sin^2 35^\circ + \cos^2 35^\circ + 1 = 1 + 1 = 2.$$

Javob: 2.

28. Tenglamani yeching:

$$(9 + \sqrt{x})^{\frac{1}{3}} + (9 - \sqrt{x})^{\frac{1}{3}} = 3\sqrt[3]{2}$$

Yechish:

1) aniqlanish sohasi $x \geq 0$.

2) tenglikning ikkala qismini kubga oshiramiz.

$$((9 + \sqrt{x})^{\frac{1}{3}} + (9 - \sqrt{x})^{\frac{1}{3}})^3 = (3\sqrt[3]{2})^3$$

$$9 + \sqrt{x} + 9 - \sqrt{x} + 3(9 + \sqrt{x})^{\frac{1}{3}}(9 - \sqrt{x})^{\frac{1}{3}} -$$

$$-((9 + \sqrt{x})^{\frac{1}{3}} + (9 - \sqrt{x})^{\frac{1}{3}}) = 54$$

$$18 + 3(81 - \sqrt{x^2})^{\frac{1}{3}} \cdot 3\sqrt[3]{2} = 54$$

$$2 + (81 - x)^{\frac{1}{3}} \cdot \sqrt[3]{2} = 6$$

$$((81 - x) \cdot 2)^{\frac{1}{3}} = 4$$

$$(81 - x) \cdot 2 = 64$$

$$81 - x = \frac{64}{2} = 32,$$

$$81 - x = 32,$$

$$x = 49.$$

Javob: 49.

29. Agar $x = \frac{\sqrt{15}+1}{2}$ bo'lsa,

$$\frac{x^3 - 2x^2 + 6,5x - 1}{x^2 - x + 1}$$

kasrning qiymatini hisoblang.

Yechish:

$$\frac{x^3 - 2x^2 + 6,5x - 1}{x^2 - x + 1} = x - 1 + \frac{4,5x}{x^2 - x + 1} =$$

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

$$x = \frac{\sqrt{15}+1}{2} \text{ da}$$

$$\frac{\sqrt{15}+1}{2} - 1 + \frac{4,5 \cdot \frac{\sqrt{15}+1}{2}}{\left(\frac{\sqrt{15}+1}{2} - \frac{1}{2}\right)^2 + \frac{3}{4}} =$$

$$= \frac{\sqrt{15}-1}{2} + \frac{4,5 \cdot \frac{\sqrt{15}+1}{2}}{4,5} = \frac{\sqrt{15}-1}{2} +$$

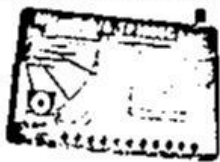
$$\frac{\sqrt{15}+1}{2} = \sqrt{15}$$

Javob: $\sqrt{15}$.

31. Xab(huB) qanday qurilma?

Yechish:

Tarmoq konsentratori, shuningdek hub (inglizcha hub – markaz) – urama juftlik kabeli orqali kompyuterlarni Ethernet tarmog'iga ulash uchun foydalaniladigan qurilma. Hozirgi kunda kommutatorlar ularni o'rini egallashgan.



Javob: ko'p manzilli qurilma bo'lib, kompyuterlarni tarmoq kabellari orqali ulash uchun ishlatiladi.

32. Axborotni uzatish o'lchov birligi sifatida ... qabul qilingan.

Yechish:

Ma'lumki, axborot ustida uzoq masofaga uzatish amali bajarilishi mumkin. Axborotni kompyuter yordamida uzatish uchun esa sarflanadigan vaqt uning hajmiga bog'liq bo'ladi.

30. Tengsizliklar sistemasini yeching:

$$\begin{cases} \frac{1}{2-x} \geq 1 \\ 2 \cdot 4^{2x} \geq 32^x \end{cases}$$

Yechish:

$$\begin{cases} \frac{1}{2-x} \geq 1 \\ 2 \cdot 4^{2x} \geq 32^x \end{cases} \Rightarrow \begin{cases} \frac{1}{2-x} - 1 \geq 0 \\ 2^{4x+1} \geq 2^{5x} \end{cases} \Rightarrow$$

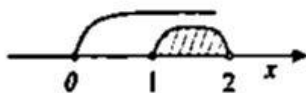
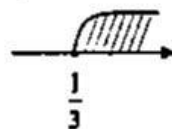
$$\Rightarrow \begin{cases} \frac{x-1}{2-x} \geq 0 \\ x \leq 1 \end{cases}$$

$$1) \frac{x-1}{2-x} \geq 0, \frac{x-1}{x-2} \leq 0$$



$$1 \leq x < 2$$

$$2) x \leq 2$$



Javob: {1}.

Axborotning vaqt birligi ichida uzatilgan miqdori axborotni uzatish tezligi deb ataladi.
 Axborot uzatish tezligining birligi sifatida bod kiritilgan: 1 bod = 1 bit/sekund.
 Masalan, 120 Mbt/8 minut = 122880 Kbt/8 minut = 15360 Kbt/minut =
 = 15728640 bayt/minut = 262144 bayt/sekund = 2097152 bit/sekund = 2097152 bod.

Javob: 1 bod.

33. Quyidagi HTML-hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda nechanchi katakda qalin shiftli tartiblangan ro'yxat qo'llanilgan?

```
<table> <tr> <td colspan=2> <em> <ul> <li> test </em>
</ul> </td> <td rowspan=2> <ul> <strong> <li> test
</strong> </ul> </td> </tr> <tr> <td> <strong> <ol> <li>
test </strong> </ol> </td> <td> <ol> <cite> <li> test </cite> </ol> </td> </tr> </table>
```

Yechish:

<td> va </td> bu teglar juftligi jadvalning har bir yacheykasi uchun matn ajratadi;
 va « - raqamlangan ro'yxatni yaratish uchun foydalaniladi.
 tegi shriftni qalinlashtirish.

- 1-katak: <tr> <td colspan=2> test </td>
- 2-katak: <td rowspan=2> test </td> </tr>
- 3-katak: <tr> <td> test </td>
- 4-katak: <td> <cite> test </cite> </td> </tr>

Javob: 3-katakda.

34. MS Excel. =?(3;4)+3значен(??(4;3)) formulaning natijasi 145 bo'lishi uchun ? va ?? belgilarining o'miga qo'yish mumkin bo'lgan funksiyalar to'g'ri berilgan javobni aniqlang.

Yechish:

СТЕПЕНЬ(son; daraja ko'rsatkichi)	Sonni darajaga ko'taradi.
ЗНАЧЕН(matn)	Matn ko'rinishidagi sonni songa o'tkazadi.

Yuqoridagilarni bilgan holda:

=Степень(3;4)+3значен(Степень(4;3)) = 81 + 64

Javob: Степень, Степень.

35. Web brauzerda matnning ko'rinishi quyidagicha bo'lishi uchun uning HTML kodi qanday bo'lishi kerak?

6. Chala kvadrat tenglama $ax^4+c=0$ ko'rinishida bo'lmaydi.

Yechish:

- – raqamlangan ro'yxat;
- – ushbu juft teg ichida ro'yxat elementlari belgilanadi;
- <sup> – yuqori indeks.
- <i> – kursiv.

Javob: <ol start="6">chala kvadrat tenglama<i>ax⁴+c=0</i></s> ko'rinishda bo'lmaydi.

36. Windows operatsion tizimida fayl nomi noto'g'ri berilgan javobni toping.

Yechish:

Windows operatsion tizimida fayl nomida \ : * ? < > | belgilaridan foydalanib bo'lmaydi.

Javob: <Informatika>.doc.