

2017-yil matematika variant yechimlari (spectrum)

16-variant

Bizning kanal : @axborotnoma

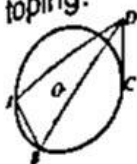
Adminsratorlar hayati : @axborotnoma_bot

Matematika yordam guruhi : @axborotnomaguruhi

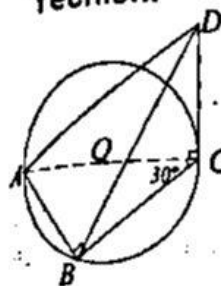
Reklama xizmati : @axborotnoma_reklama

16-variant

1. CD kesma radiusi 4 sm bo'lgan aylana tekisligiga perpendikulyar. Agar $|CD| = 1$ va $\angle BCA = 30^\circ$ bo'lsa, ABD uchburchak yuzini toping.



Yechish:



Diametrga tiralgan burchak to'g'ri burchak bo'ladi.

Bundan $\angle ABC = 90^\circ$.

$R = 4$

$|AC| = 2R = 8$

$|CD| = 1$

$|BC| = 8 \cdot \cos 30^\circ = 8 \cdot \frac{\sqrt{3}}{2} = 4\sqrt{3}$

$|AB| = 8 \cdot \sin 30^\circ = 8 \cdot \frac{1}{2} = 4$

Uchburchak DCB to'g'ri burchakli bo'lganligi uchun $DB^2 = BC^2 + DC^2$.

$DB^2 = (4\sqrt{3})^2 + 1^2 = 49, DB = 7$

$DC \perp BC, BC \perp AB$ ekanligidan $DB \perp AB$ bo'ladi.

Demak $S_{ABD} = \frac{AB \cdot DB}{2} = \frac{4 \cdot 7}{2} = 14 \text{ sm}^2$.

Javob: 14.

2. Tengsizlikning butun yechimlarini

toping: $\begin{cases} 13 - 2x > 0 \\ 3x - 9 > 0 \end{cases}$

Yechish:

$\begin{cases} 13 - 2x > 0 \\ 3x - 9 > 0 \end{cases} \Rightarrow \begin{cases} -2x > -13 \\ 3x > 9 \end{cases} \Rightarrow \begin{cases} x < 6,5 \\ x > 3 \end{cases}$

$3 < x < 6,5$

Butun yechimlari 4, 5, 6.

Javob: 4, 5, 6.

3. $\frac{x+1}{x+4} + \frac{x+4}{x+1} = -2$ tenglama ildizlari

sonini toping.

Yechish:

1) $\frac{x+1}{x+4} = a$

2) $a + \frac{1}{a} + 2 = 0$

$a^2 + 2a + 1 = 0,$

$(a + 1)^2 = 0,$

$a = -1$

3) $\frac{x+1}{x+4} = -1,$

$x + 1 = -x - 4$

$2x = -5,$

$x = -2,5.$

4) tenglama bitta yechimga ega.

Javob: 1.

4. $f(x) = a^2 \frac{(x-b)(x-c)}{(a-b)(a-c)} +$

$+ b^2 \frac{(x-a)(x-c)}{(b-a)(b-c)} + c^2 \frac{(x-a)(x-b)}{(c-a)(c-b)}$

funksiyaning $x = 2$ da hosilasini toping.

(Bu yerda $(a-b)(a-c)(b-c) \neq 0$)

Yechish:

$f(x) = a^2 \frac{(x-b)(x-c)}{(a-b)(a-c)} +$

$+ b^2 \frac{(x-a)(x-c)}{(b-a)(b-c)} + c^2 \frac{(x-a)(x-b)}{(c-a)(c-b)}$

$a \neq b, a \neq c, b \neq c.$

1) $f'(x) = \frac{a^2}{(a-b)(a-c)} \cdot (x^2 - bx - cx + bc)' -$

$\frac{b^2}{(a-b)(b-c)} \cdot (x^2 - ax - cx + ac)' +$

$\frac{c^2}{(a-c)(b-c)} \cdot (x^2 - ax - bx + ab)' =$

$= \frac{a^2(2x-b-c)}{(a-b)(a-c)} - \frac{b^2(2x-a-c)}{(a-b)(b-c)} +$

$\frac{c^2(2x-a-b)}{(a-c)(b-c)}$

2) $x = 2$

$$f'(2) = \frac{a^2(4-b-c)(b-c) - b^2(4-a-c)(a-c) + c^2(4-a-b)(a-b)}{(a-b)(b-c)(a-c)} =$$

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

$$= \frac{4(b(a-c)(a+c) - ac(a-c) - b^2(a-c))}{(a-b)(b-c)(a-c)} =$$

$$= \frac{4(a-b)(b-c)(a-c)}{(a-b)(b-c)(a-c)} = 4.$$

Javob: 4.

5. $\begin{cases} x^3 + y^6 = 91 \\ x + y^2 = 7 \end{cases}$ sistemaning barcha

haqiqiy yechimlari $(x_1, y_1), \dots, (x_n, y_n)$ bo'lsin, $x_1 + y_1 + \dots + x_n + y_n$ ni toping.

Yechish:

$$\begin{cases} x^3 + y^6 = 91 \\ x + y^2 = 7 \end{cases}$$

$$x_1 + y_1 + \dots + x_n + y_n = ?$$

1) $y^2 = a$

$$\begin{cases} x + a = 7 \\ x^3 + a^3 = 91 \end{cases} \Rightarrow$$

$$\Rightarrow \begin{cases} x + a = 7 \\ (x+a)(x^2 - ax + a^2) = 91 \end{cases} \Rightarrow$$

$$\Rightarrow \begin{cases} x + a = 7 \\ (x+a)^2 - 3ax = 13 \end{cases} \Rightarrow \begin{cases} x + a = 7 \\ 3ax = 36 \end{cases} \Rightarrow$$

$$\Rightarrow \begin{cases} x + a = 7 & x_1 = 3, a_1 = 4 \\ ax = 12 & x_2 = 4, a_2 = 3 \end{cases}$$

2) $y^2 = 4, y = \pm 2$

$y^2 = 3, y = \pm\sqrt{3}$

3) $x_1 = 3, y_1 = 2, (3; 2)$

$x_2 = 3, y_2 = -2, (3; -2)$

$x_3 = 4, y_3 = \sqrt{3}, (4; \sqrt{3})$

$x_4 = 4, y_4 = -\sqrt{3}, (4; -\sqrt{3})$

4) $3 + 2 + 3 + (-2) + 4 + \sqrt{3} + 4 + (-\sqrt{3}) = 14.$

Javob: 14.

6. $4x^2 + 4x + 1 \leq 0$ tengsizlik o'rinli bo'lgan barcha x haqiqiy sonlar uchun $|2x + 1|$ ifodaning qiymatini toping.

Yechish:

$$4x^2 + 4x + 1 \leq 0$$

1) $(2x + 1)^2 \leq 0$, bundan $2x + 1 = 0$ ekanligi kelib chiqadi.

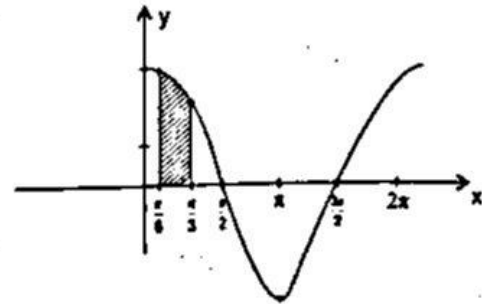
2) $|2x + 1| = |0| = 0.$

Javob: 0.

7. $y = 2\cos x, y = 0, x = \frac{\pi}{6}, x = \frac{\pi}{3}$ chiziqlari bilan chegaralangan soha yuzasini toping.

Yechish:

$$y = 2\cos x, y = 0, x = \frac{\pi}{6}, x = \frac{\pi}{3}$$



$$S = \int_{\frac{\pi}{6}}^{\frac{\pi}{3}} 2 \cos x dx = 2 \sin x \Big|_{\frac{\pi}{6}}^{\frac{\pi}{3}} =$$

$$= 2 \cdot \left(\sin \frac{\pi}{3} - \sin \frac{\pi}{6} \right) = 2 \cdot \left(\frac{\sqrt{3}}{2} - \frac{1}{2} \right) = \sqrt{3} - 1.$$

Javob: $\sqrt{3} - 1.$

8. Qarang: 4-variant 17-savol (31-bet).

9. ABC uchburchakda $AB = 4$ sm, $BC = \sqrt{13}$ sm, $AC = 3$ sm bo'lsa, A burchak kosinusini toping.

Berilgan:

$\triangle ABC$

$AB = 4$ sm

$BC = \sqrt{13}$ sm

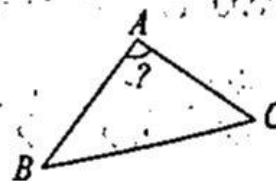
$AC = 3$ sm

$\cos A = ?$

Cosinuslar teoremasiga ko'ra

$$a^2 = b^2 + c^2 - 2bc \cos \alpha$$

Yechish:



$$\cos \alpha = \frac{b^2 + c^2 - a^2}{2bc}$$

$$\cos \alpha = \frac{AB^2 + AC^2 - BC^2}{2AB \cdot AC} = \frac{12}{2 \cdot 4 \cdot 3} = \frac{1}{2}$$

Javob: $\frac{1}{2}$.

10. $4\sin(\pi - \frac{\pi}{3})\cos(\frac{\pi}{6}) + 4\sin\frac{7\pi}{6}$

ifodaning qiymatini toping.

Yechish:

$$4\sin(\pi - \frac{\pi}{3})\cos(\frac{\pi}{6}) + 4\sin\frac{7\pi}{6}$$

1) keltirish formulasiga asosan

$$\sin(\pi - \alpha) = \sin \alpha$$

$$\sin(\pi + \alpha) = -\sin \alpha$$

$$2) \sin(\pi - \frac{\pi}{3}) = \sin \frac{\pi}{3} = \frac{\sqrt{3}}{2}, \cos \frac{\pi}{6} = \frac{\sqrt{3}}{2}$$

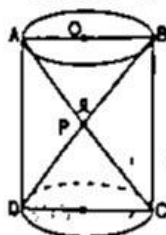
$$\sin \frac{7\pi}{6} = \sin(\pi + \frac{\pi}{6}) = -\sin \frac{\pi}{6} = -\frac{1}{2}$$

$$3) 4 \cdot \frac{\sqrt{3}}{2} \cdot \frac{\sqrt{3}}{2} + 4 \cdot (-\frac{1}{2}) = 3 - 2 = 1.$$

Javob: 1.

11. Silindr asosi va o'q kesimi yuzalari nisbati $\pi:4$ kabi. O'q kesimi diagonallari orasidagi burchakni toping.

Yechish:



$$S_{\text{asos}} : S_{\text{kesim}} = \pi : 4$$

$$S_{\text{asos}} = \pi R^2$$

$$S_{\text{kesim}} = 2RH$$

$$\frac{\pi R^2}{2RH} = \frac{\pi}{4}, H = 2R$$

$$d^2 = H^2 + (2R)^2 = 2 \cdot (2R)^2, d = 2R\sqrt{2}$$

$$\Delta APB \text{ teng yonli, } AP = PB = \frac{d}{2} = R\sqrt{2}$$

$$\sin \frac{\alpha}{2} = \frac{AO}{AP} = \frac{R}{R\sqrt{2}} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$\frac{\alpha}{2} = 45^\circ, \alpha = 90^\circ$$

Javob: 90° .

12. $\sqrt{2x+6} = \sqrt{x-1} + \sqrt{3x-11}$
tenglamaning ildizlari yig'indisini toping.

Yechish:

1) aniqlanish sohasi:

$$\begin{cases} 2x+6 \geq 0 \\ x-1 \geq 0 \\ 3x-11 \geq 0 \end{cases} \Rightarrow \begin{cases} x \geq -3 \\ x \geq 1 \\ x \geq \frac{11}{3} \end{cases} \Rightarrow x \geq \frac{11}{3}$$

$$2) (\sqrt{2x+6})^2 = (\sqrt{x-1} + \sqrt{3x-11})^2$$

$$2x+6 = x-1 + 3x-11 +$$

$$+ 2 \cdot \sqrt{(x-1)(3x-11)}$$

$$-2x+18 = 2\sqrt{3x^2-14x+11}$$

$$-x+9 = \sqrt{3x^2-14x+11}$$

$$-x+9 \geq 0, x \leq 9$$

$$x^2-18x+81 = 3x^2-14x+11$$

$$2x^2+4x-70 = 0, x^2+2x-35 = 0$$

$$x = 5, x = -7$$

3) $\frac{11}{3} \leq x \leq 9$ oraliqqa $x = 5$ tegishli. Demak,

tenglamaning ildizi faqat 5. Ildizlari yig'indisi ham 5 ga teng.

Javob: 5.

13. Agar $f(x) = x^3 + 2ax^2 + 3bx + 8$ va $f''(3) = 22$ bo'lsa, a ni toping.

Yechish:

$$f(x) = x^3 + 2ax^2 + 3bx + 8, f''(3) = 22, a = ?$$

$$1) f'(x) = (x^3 + 2ax^2 + 3bx + 8)' = 3x^2 + 4ax + 3b$$

$$2) f''(x) = (3x^2 + 4ax + 3b)' = 6x + 4a$$

$$3) f''(3) = 6 \cdot 3 + 4a = 22$$

$$18 + 4a = 22, 4a = 4, a = 1.$$

Javob: 1.

14. Agar $f(2x-1) = 4x^3 - 3x^2 + 10x + 4$ bo'lsa, $f'(1)$ ni toping.

Yechish:

$$f(2x-1) = 4x^3 - 3x^2 + 10x + 4, f'(1) = ?$$

$$1) 2x-1 = a, x = \frac{a+1}{2}$$

$$2) f(a) = 4 \cdot \left(\frac{a+1}{2}\right)^3 - 3 \cdot \left(\frac{a+1}{2}\right)^2 + 10 \cdot \frac{a+1}{2} + 4 =$$

$$= \frac{4}{8}(a+1)^3 - \frac{3}{4}(a+1)^2 + 5a + 9$$

$$3) f'(a) = \frac{3}{2}(a+1)^2 - \frac{3}{2}(a+1) + 5$$

$$4) f'(1) = \frac{3}{2}(1+1)^2 - \frac{3}{2}(1+1) + 5 =$$

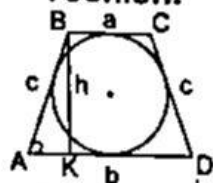
$$= 6 - 3 + 5 = 8.$$

Javob: 8.

15. Qarang: 2-variant 9-savol (13-bet).

16. Aylanaga tashqi chizilgan tengyonli trapetsiyaning yuzasi $288\sqrt{3}$ ga teng. Trapetsiya katta asosidagi burchagi $\pi/3$ ga teng bo'lsa, shu trapetsiyaning yon tomonini toping.

Yechish:



$$S = 288\sqrt{3}$$

$$\alpha = \frac{\pi}{3}$$

$$AB = ?$$

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

$$AD = a, BC = b, AB = CD = c, BK = h.$$

$$2) AD + BC = AB + CD, a + b = 2c$$

$$\sin 60^\circ = \frac{h}{c}, h = c \cdot \frac{\sqrt{3}}{2}.$$

$$3) S = c \cdot h = c \cdot c \cdot \frac{\sqrt{3}}{2} = c^2 \cdot \frac{\sqrt{3}}{2}$$

$$c^2 \cdot \frac{\sqrt{3}}{2} = 288\sqrt{3}, c^2 = 288 \cdot 2 = 144 \cdot 4$$

$$c = 12 \cdot 2 = 24.$$

Javob: 24.

17. Javoblardan qaysi biri

$(x^2 - 9) \cdot (4x - x^3) = 0$ tenglamaning yechimi bo'la olmaydi?

Yechish:

$(x^2 - 9) \cdot (4x - x^3) = 0$ tenglama ildizlarini

topamiz: $x^2 - 9 = 0, 4x - x^3 = 0$

$$1) x^2 = 9, x = \pm 3$$

2) $x(4 - x^2) = 0, x = 0, x = \pm 2$
Javoblarda berilgan 4 soni tenglama yechimi bo'la olmaydi.

Javob: 4.

18. $|x| < \pi$ ni qanoatlantiruvchi $\log_2(\cos x) \leq -1$ tengsizlikning yechimini toping.

Yechish:

$$|x| < \pi, \log_2(\cos x) \leq -1.$$

$$1) \text{aniqlanish sohasi } \cos x > 0,$$

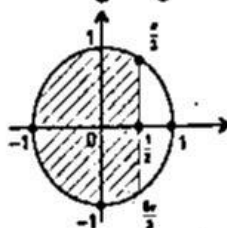
$$x \in \left(-\frac{\pi}{2} + 2\pi n; \frac{\pi}{2} + 2\pi n\right)$$

$$2) |x| < \pi, -\pi < x < \pi \text{ bo'lganligi sababli}$$

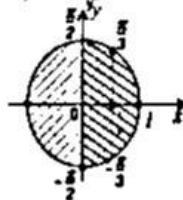
$$\text{aniqlanish sohasi } x \in \left(-\frac{\pi}{2}; \frac{\pi}{2}\right)$$

$$3) \log_2(\cos x) \leq -1, \cos x \leq \frac{1}{2}.$$

$$2\pi n + \frac{\pi}{3} \leq \frac{5\pi}{3} + 2\pi n, n \in \mathbb{Z}.$$



4) tengsizlikning yechimi



$$-\frac{\pi}{2} < x \leq -\frac{\pi}{3}$$

$$\frac{\pi}{3} \leq x < \frac{\pi}{2}.$$

$$\text{Javob: } \left(-\frac{\pi}{2}; -\frac{\pi}{3}\right] \cup \left[\frac{\pi}{3}; \frac{\pi}{2}\right).$$

19. Qarang: 13-variant 5-savol (99-bet).

20. Uchburchakning ikkita burchagining kosinuslari mos ravishda $\frac{12}{13}$ va $\frac{20}{101}$ ga teng. Uchinchi burchakning sinusini toping.

Yechish:

$$\cos \alpha = \frac{12}{13}, \quad \cos \beta = \frac{20}{101}, \quad \sin \gamma = ?$$

1) uchburchak ichki burchaklari yig'indisi 180° ga teng.

$$\alpha + \beta + \gamma = 180^\circ$$

$$\alpha + \beta = 180^\circ - \gamma$$

$$\sin(\alpha + \beta) = \sin(180^\circ - \gamma) = \sin \gamma$$

$$\sin \gamma = \sin \alpha \cos \beta + \cos \alpha \sin \beta.$$

$$2) \cos \alpha = \frac{12}{13},$$

$$\sin \alpha = \sqrt{1 - \cos^2 \alpha} = \sqrt{1 - \left(\frac{12}{13}\right)^2} = \sqrt{1 - \frac{144}{169}} = \frac{5}{13}$$

$$3) \cos \beta = \frac{20}{101},$$

$$\sin \beta = \sqrt{1 - \cos^2 \beta} = \sqrt{1 - \left(\frac{20}{101}\right)^2} =$$

$$= \sqrt{1 - \frac{400}{10201}} = \frac{99}{101}$$

$$4) \sin \gamma = \frac{5}{13} \cdot \frac{20}{101} + \frac{12}{13} \cdot \frac{99}{101} = \frac{1288}{1313}$$

Javob: $\frac{1288}{1313}$.

21. $\bar{a}(2; 4; 0)$, $\bar{b}(-3; 6; 3)$ bo'lsa,

$\left| \frac{1}{2}\bar{a} + \frac{2}{3}\bar{b} \right|$ ning qiymatini toping.

Yechish:

$$\bar{a}(2; 4; 0), \quad \bar{b}(-3; 6; 3)$$

$$1) \frac{1}{2}\bar{a} = (1; 2; 0), \quad \frac{2}{3}\bar{b} = (-2; 4; 2)$$

$$2) \frac{1}{2}\bar{a} + \frac{2}{3}\bar{b} = (-1; 6; 2)$$

$$3) \left| \frac{1}{2}\bar{a} + \frac{2}{3}\bar{b} \right| = \sqrt{1^2 + 6^2 + 2^2} = \sqrt{41}.$$

Javob: $\sqrt{41}$.

$$22. y = \sqrt{-x^2 + 4x + 32} - \frac{2}{x-8}$$

funksiyaning aniqlanish sohasi nechta juft haqiqiy yechimga ega?

Yechish:

$$y = \sqrt{-x^2 + 4x + 32} - \frac{2}{x-8}$$

$$D(y) = ?$$

$$1) \begin{cases} -x^2 + 4x + 32 \geq 0 \\ x - 8 \neq 0 \end{cases} \Rightarrow$$

$$\Rightarrow \begin{cases} x^2 - 4x - 32 \leq 0 \\ x \neq 8 \end{cases} \Rightarrow \begin{cases} (x+4)(x-8) \leq 0 \\ x \neq 8 \end{cases} \Rightarrow$$

$$\Rightarrow -4 \leq x < 8, \quad x \in [-4; 8)$$

2) $[-4; 8)$ oraliqda 6 ta juft butun yechimga ega.

Javob: 6.

23. Kubning yon yoqlarida yarim sferalar chizilgan. Yarim sferaning asosi yon yoqiga ichki chizilgan, hosil bo'lgan jismning hajmi esa $32(2 + \pi)$. Kubning qirrasini topilsin.

Yechish:



$$V = 32(2 + \pi)$$

$$a = ?$$

$$1) V = V_k + 6 \cdot V_{\text{sfera yarmi}}$$

$$2) V = a^3 + 6 \cdot \frac{1}{2} \cdot \frac{4\pi r^3}{3} = a^3 + 4\pi r^3$$

$$r = \frac{a}{2}$$

$$3) V = a^3 + 4\pi \left(\frac{a}{2}\right)^3 = a^3 \left(1 + \frac{\pi}{2}\right) = \frac{a^3}{2} (2 + \pi)$$

$$4) 32(2 + \pi) = \frac{a^3}{2} (2 + \pi)$$

$$a^3 = 64, \quad a = 4.$$

Javob: 4.

24. Ratsional sonlar to'plami qanday ko'rinishda yoziladi?

Yechish:

Ratsional sonlar to'plamini Q bilan

belgilaymiz. $\frac{p}{q}$ ko'rinishda yozish mumkin

bo'lgan har qanday son ratsional son deyiladi. Bunda $p \in \mathbb{Z}$, $q \in \mathbb{N}$.

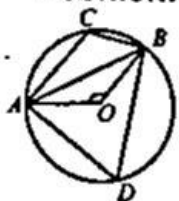
Demak, $Q = \{r \mid r = \frac{p}{q}, p \in \mathbb{Z}, q \in \mathbb{N}\}$.

Javob: $Q = \{r \mid r = \frac{p}{q}, p \in \mathbb{Z}, q \in \mathbb{N}\}$.

25. Qarang: 15-variant 15-savol (113-bet).

26. Aylanaga o'tkazilgan vatar uni 5:7 nisbatga bo'ladi. Ushbu vatarga tiralgan aylanaga ichki chizilgan katta burchakni toping.

Yechish:



AB – vatar,
 $\cup ACB : \cup ADB = 5 : 7$
 $5x + 7x = 360^\circ$
 $12x = 360^\circ, x = 30^\circ$
 $\angle AOB = 5x = 150^\circ$

$\angle ADB = \frac{\angle AOB}{2} = 75^\circ$

$\angle ACD = \frac{7x}{2} = \frac{7 \cdot 30^\circ}{2} = 105^\circ$

Aylanaga ichki chizilgan burchaklardan kattasi 105° .

Javob: 105° .

27. Qarang: 4-variant 19-savol (32-bet).

28. $y = \lg(4 - x)$ funksiyaning aniqlanish sohasini toping.

Yechish:

$y = \lg(4 - x)$,

$D(y) = ?$

$4 - x > 0, -x > -4, x < 4$

$D(y) = (-\infty; 4)$.

Javob: $(-\infty; 4)$.

29. $f(x) = \frac{\sqrt{x} + 2}{\sqrt{x} + 3}$ bo'lsa, $f'(1)$ ni toping.

Yechish:

Bolinmaning hosilasini topamiz:

31. O'n oltilik sanoq sistemasidagi $7A,84_{16}$ sonini o'nlik sanoq sistemasida ifodalang.

Yechish:

$7A,84_{16}$ – sonini o'n oltilik sanoq sistemasidan o'nlik sanoq sistemasiga o'tish uchun quyidagi amal bajariladi.

$7A,84_{16} = 7 \cdot 16^1 + A \cdot 16^0 + 8 \cdot 16^{-1} + 4 \cdot 16^{-2}$

A o'rniga 10 to'g'ri keladi.

$7 \cdot 16 + 10 \cdot 1,$

$\left(\frac{u}{v}\right)' = \frac{u' \cdot v - u \cdot v'}{v^2}, (\sqrt{x})' = \frac{1}{2\sqrt{x}}$

$f'(x) = \left(\frac{\sqrt{x} + 2}{\sqrt{x} + 3}\right)' =$

$\frac{(\sqrt{x} + 2)'(\sqrt{x} + 3) - (\sqrt{x} + 2) \cdot (\sqrt{x} + 3)'}{(\sqrt{x} + 3)^2} =$

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

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

$f'(1) = \frac{1}{2 \cdot \sqrt{1}(\sqrt{1} + 3)^2} = \frac{1}{2 \cdot 16} = \frac{1}{32}$

Javob: $\frac{1}{32}$.

30. $x^2 + y^2 + z^2 = 6x + 8y + 10z - 50$ bo'lsa, $x - y + z$ ni toping.

Yechish:

$x^2 + y^2 + z^2 = 6x + 8y + 10z - 50$

$x - y + z = ?$

1) $x^2 + y^2 + z^2 - 6x - 8y - 10z + 50 = 0$

$(x - 3)^2 + (y - 4)^2 + (z - 5)^2 = 0$

2) $x - 3 = 0, x = 3$

$y - 4 = 0, y = 4$

$z - 5 = 0, z = 5$

3) $x - y + z = 3 - 4 + 5 = 4.$

Javob: 4.

$$\frac{8}{16} + \frac{4}{16 \cdot 16} = 122 \frac{33}{64} \Rightarrow$$

$$\Rightarrow 122,515625.$$

Javob: 122,515625.

32. Qarang: 15-variant 32-savol (115-bet).

33. Qarang: 12-variant 33-savol (96-bet).

34. Quyidagi HTML-hujjat kodi yozilishi bo'yicha kataklar ketma-ket sanalganda nechanchi katakda qalin shriftli markerlangan ro'yxat qo'llanilgan?

```
<table> <tr> <td colspan=2> <em> <ul> <li> test </ul>
</td> <td rowspan=2> <ul> <strong> <li> test </strong> </ul>
</td> </tr> <tr> <td> <ol> <strong> <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; Markerlangan ro'yxatni yaratish uchun «» va «» dan foydalaniladi; tegi shriftni qalinlashtiradi.

- 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: ikkinchi katakda.

35. Sakkizlik sanoq sistemasida 54,21₈ va 13,23₈ sonlarining ko'paytmasini toping.

Yechish:

$$54,21_{(8)} \cdot 13,23_{(8)} = ?$$

$$54,21_{(8)} = 101100,010001_{(2)}$$

$$13,23_{(8)} = 1011,010011_{(2)}$$

```

      101100,010001
    * 1011,010011
    -----
      101100010001
      101100010001
      000000000000
+   000000000000
  101100010001
  000000000000
  101100010001
  101100010001
  000000000000
  101100010001
  -----
111110100,000100000011
```

$$111110100,000100000011_{(2)} = 764,0403_{(8)}$$

Javob: 764,0403.

36. MS ACCESS 2003 dasturida "запись" nimani bildiradi?

Yechish:

MS Access dasturida ma'lumotlar ombori yaratilganda, u bir nechta o'zaro bog'langan jadvallardan iborat bo'ladi. Har bir jadval satr va ustunlardan iborat.

Ma'lumotlar omborida har bir satr – "yozuv", har bir ustun – "maydon" deb ataladi.

Javob: jadvaldagi satr.