

Matematika IX sinf

1 variant

I qism

- Kvadrat uchhadni ko'paytuvchilarga ajrating: $3y^2 + 7y - 6$.
A $(3y - 2)(y + 3)$ B $(3y + 2)(y - 3)$ C $(y + 2)(3y - 3)$ D $(-3y + 2)(y - 3)$
- Kasrni qisqartiring: $\frac{3p^2 + p - 2}{4 - 9p^2}$.
A $\frac{p+1}{2+3p}$ B $-\frac{p+1}{2+3p}$ C $\frac{p-1}{2+3p}$ D $\frac{p+1}{3p-2}$
- Tengsizlikni yeching: $2x^2 - 13x + 6 \leq 0$.
A $[0,5;6]$ B $(0,5;-6)$ C $(0,5;6)$ D $(-0,5;6)$
- Berilgan: $\sin \alpha = \frac{4}{5}$, $\frac{\pi}{2} < \alpha < \pi$. $\cos \alpha - \operatorname{tg} \alpha$ ning qiymatini toping.
A $-\frac{11}{15}$ B $1\frac{14}{15}$ C $\frac{11}{15}$ D $-1\frac{14}{15}$
- CDE uchburchakda $CD = 12$ sm, $DE = 15$ sm, $CE = 18$ sm, DK – D burchakning bissektrisasi. KE va CK kesmalar uzunliklarning ayirmasini toping.
A 3 sm B 2,5 sm C 2 sm D 1,5 sm

II qism

- 1011, 84, 33, 97, 800, 17, 105, 213 sonlaridan 2 ga bo'linmaydiganlarini toping va kamayish tartibida joylashtiring.
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- Ko'phadlarning ayirmasini toping: $3x + 1$ va $-3x^2 - 3x + 1$.
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- Tenglamani yeching: $3x^2 - 2x - 5 = 0$.
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- Tengsizlikni yeching: $7x^2 - 9x + 3 \geq 0$
... ..
- Parallelogrammning tomonlari 6 sm va 5 sm bo'lib, burchaklaridan biri 150° ga teng. Parallelogrammning yuzini toping.
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III qism

- Nishonda umumiy markazli to'rtta aylana mavjud bo'lib, ularning radiuslari 1, 2, 3, 4 ga teng. Eng kichik doira yuzini, shuningdek nishon uchha halqasining ha bining yuzini toping.

2 variant

I qism

- EKUK(32, 36, 48) ning EKUB(32, 36, 48) da nisbatini toping..
A 32 B 36 C 72 D 48
- Fabrikaning uchta sexida 480 ta ishchi ishlaydi. Ikkinchi sexdagi ishchilar soni birinchi sexda ishlaydigan ishchilarning 36% ini tashkil qiladi. Uchinchi sexda ishlaydigan ishchilar soni, ikkinchi sexdagi ishchilar sonining $\frac{2}{3}$ qismni tashkil qiladi. Ikkinchi sexda qancha ishchi ishlaydi?
A 300 B 180 C 72 D 108
- 3,5,314 sonini yuzdan birgacha aniklikda yaxlitlang. Yaxlitlashning nisbiy xatoligini toping.

A 0,0075 % **B** 7,5 % **C** 0,075 % **D** 75 %

4. Ifodaning qiymatini toping: $\sqrt[3]{15\frac{5}{8}} - \sqrt[4]{0,0081} - \frac{2}{\sqrt{\frac{1}{16}}}$.

A 3 **B** -5,8 **C** 2 **D** $-6\frac{19}{30}$

5. Uchburchakning tomonlaridan biri $8\sqrt{3}$ sm, shu tomon qarshisidagi burchagi 60° ga teng. Uchburchakka tasqi chizilgan aylana radiusini toping.

A 8 sm **B** $\frac{8}{\sqrt{3}}$ sm **C** $4\sqrt{3}$ sm **D** 6 sm

II qism

1. Ifodaning qiymatini toping: $(-2)^{-2} + 0,4^{-1} - (\sqrt{3})^0$.

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2. Ifodani soddalashtiring: $\frac{a^{-5} \cdot a^2}{a^{-1}}$.

... ..

3. Tenglamalar sistemasini yeching: $\begin{cases} 3x - y = 3, \\ 3x - 2y = 0 \end{cases}$

... ..

4. Tengsizlikni yeching: $x^2 + 4x - 5 \leq 0$.

... ..

5. Uchburchakning tomonlari 8 sm, 5 sm va 7 sm. Berilgan uchburchakning o'rta chiziqlaridan hosil bo'lgan uchburchak perimetrini toping.

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III qism

1. Agar, $\vec{a}\left(\frac{1}{4}; -1\right)$, $\vec{b}(2;3)$ bo'lsa, \vec{a} va \vec{b} vektorlarning skalyar ko'paytmasini toping..

3 variant

I qism

1. $y = 3x - 2$ va $y = -2x + 1$ funksiyalar grafiklarining kesishish nuqtalarning koordinatalarini toping.

A $\left(\frac{1}{5}; \frac{3}{5}\right)$ **B** $\left(\frac{3}{5}; -\frac{1}{5}\right)$ **C** (1;-1) **D** $\left(-\frac{1}{5}; \frac{7}{5}\right)$

2. Tengsizlikning yechimi bo'ladigan eng katta butun sonni toping:

$$x - \frac{x-3}{4} + \frac{x+1}{8} \leq 2.$$

A 1 **B** 0 **C** -2 **D** 2

3. Kasrni qisqartiring: $\frac{2x^2 + x - 15}{2x - 5}$.

A 2x **B** (x-3) **C** (x+3) **D** (2x+6)

4. Agar $\sin \alpha = \frac{15}{17}$ va $\frac{\pi}{2} < \alpha < \pi$ bo'lsa, $3\cos \alpha - 1$ ifodaning qiymatini toping.
A $\frac{7}{17}$ **B** $-1\frac{10}{17}$ **C** $-2\frac{7}{17}$ **D** $3\frac{7}{17}$
5. BD va CE lar bitta aylananing vatarlari bo'lib, A nuqta shu vatarlarning kesishish nuqtasi, AC = 6 sm, AE = 12 sm, AB ning uzunligi AD dan 1 sm kam. BD ni toping.
A 21 sm **B** $20\frac{5}{9}$ sm **C** 16 sm **D** 17 sm

II qism

1. Ifodani soddalashtiring: $\left(0,6b + \frac{a}{2}\right)\left(0,6b - \frac{a}{2}\right)$.
2. Tenglamani yeching: $-0,4(1,5x - 32) = 1 - 0,5(2x + 1)$.
3. x ning qanday qiymatlarida $y = -x^2 - 2x + 8$ funksiya qiymat musbat?
4. Yaxlitlashning nisbiy xatoligini toping: $0,628 \approx 0,63$.
5. To'g'ri to'rtburchakning kichik tomoni 4 sm va diagonali bilan 60° li burchak tashkil etadi. To'g'ri to'rtburchakning diagonalini toping.

III qism

1. Uchburchakning yuzi 60sm^2 . Agar AC = 15 sm, $\angle A = 30^\circ$ bo'lsa, AB tomonni toping.

4 variant

I qism

1. Proporsiyaning noma'lum hadini toping: $7\frac{1}{2} : 4\frac{1}{2} = x : 8\frac{1}{3}$.
A 5 **B** $\frac{5}{9}$ **C** $2\frac{2}{9}$ **D** $13\frac{8}{9}$
2. Tenglamalar sistemasini yeching:
$$\begin{cases} \frac{x-1}{3} + \frac{y-1}{3} = 2 \\ \frac{x-1}{2} - \frac{y-15}{6} = 4 \end{cases}$$

A (5;3) **B** (3;5) **C** (4;-4) **D** (6;2)
3. Tenglamaning ildizlari yig'indisini toping: $9x^4 - 37x^2 + 4 = 0$.
A 0 **B** $\frac{37}{9}$ **C** $-\frac{37}{9}$ **D** $\frac{4}{9}$
4. Parabola uchining koordinatalarini toping: $y = -2x^2 + x + 10$.
A (4;-18) **B** $\left(-\frac{1}{4}; 9\frac{5}{8}\right)$ **C** (-4;-26) **D** $\left(\frac{1}{4}; 10\frac{1}{8}\right)$.
5. Uchburchakning tomonlari 7 sm, 8 sm, 10 sm. Shu uchburchak eng katta burchagi kosinusini toping.
A $\frac{29}{140}$ **B** $\frac{19}{140}$ **C** $\frac{23}{112}$ **D** $\frac{13}{112}$

II qism

- Ifodani soddalashtiring va $x = -\frac{2}{3}$ da uning qiymatini toping:
 $-2,5(4x + 3) - 0,5(5 - 2x)$
- Tenglamani yeching : $3 - 4(2x - 5) = 2 - 6x$.
- Ifodani soddalashtiring : $\frac{4-a}{a-3} + \frac{2a-5}{3-a}$.
- Ifodani soddalashtiring : $1 - \sin \alpha \cos \alpha \cdot \operatorname{ctg} \alpha$.
- Fabrika trubosi soyasining uzunligi 37,6 m, balandligi 3,8 m bo'lgan stolba soyasining uzunligi 3,04 m. Trubaning balandligini aniqlang.

III qism

- ABC uchburchakda $AC = 12$ sm, $\angle A = 75^\circ$, $\angle C = 60^\circ$. AB va S_{ABC} ni toping.

5 variant

I qism

- Ifodaning qiymatini toping: $-8 - 4,2 : \left(1\frac{4}{21} - 2\frac{5}{14}\right)$.
A 3,1 **B** -11,6 **C** -4,4 **D** -3,8
- Ikki soning o'rta arifmetigi 22,5 ga teng, ayirmasining $\frac{1}{3}$ qismi esa $1\frac{2}{3}$ ga teng.
 Katta sonni toping.
A 20 **B** 25 **C** 23 **D** 22
- Ikkita ketma - ketkegan juft sonlarning ko'paytmasi 224 ga teng, ularning yig'indisini toping.
A -30 **B** 30 **C** 2 **D** -2
- $y = x^2$ parabola va $y = -\frac{1}{2}x + \frac{3}{2}$ to'g'ri chiziq kesishish nuqtalarining koordinalarini toping.
A (1;1) va $\left(-\frac{3}{2}; -\frac{3}{2}\right)$ **B** (1;1) va $\left(-\frac{3}{2}; -\frac{9}{4}\right)$
C (1;1) va $\left(-\frac{3}{2}; \frac{9}{4}\right)$ **D** (-1;1) va $\left(\frac{3}{2}; \frac{3}{2}\right)$
- ABC uchburchakda $AB = 1$ dm, $\angle A = 30^\circ$, $\angle B = 105^\circ$. Uchburchakning 30° li burchak qarshisida yotgan tomonini toping.
A $2\sqrt{2}$ dm **B** $\frac{1}{2}$ dm **C** $\frac{1}{\sqrt{2}}$ dm **D** $\sqrt{2}$ dm

II qism

- Ifodani soddalashtiring: $-0,5(3x - 4) - 1,5(6 + 5x)$ va $x = -0,8$ da uning qiymatini toping..
- Tenglamani yeching : $5 - 2(3x - 4) = 4x + 3$.

3. Ifodani soddalashtiring : $\frac{m^{-3} \cdot m^2}{m^{-4}}$.

... ..

4. Tengsizlikning yechimi bo'ladigan eng katta butun sonni toping: $\frac{x}{8} + \frac{1}{3} > 0$

... ..

5. Daraxt soyasining uzunligi 12,8 m, uzunligi 1,4 m, bo'lib yer ga vertikal ravishda qoqilgan qoziq soyasi 2,8 m. Daraxtning balandligini aniqlang.

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III qism

1. Trapetsiyaning perimetri 48 sm, parallel bo'lmagan tomonlari 15 sm va 13 sm. Trapetsiya o'rta chizig'ining uzunligi toping .

6 variant

I qism

1. Tengsizlikni yeching: $2x^2 - x - 15 > 0$.

A $(-\infty; -2,5)$ B $(3; +\infty)$ C $(-2,5; 3)$ D $(-\infty; -2,5) \cup (3; +\infty)$

2. Tenglamani yeching : $\frac{x^2 + 6}{5} - \frac{8 - x}{10} = 1$.

A 2; 1,5 B -2; 1,5 C -2; 1,5 D -2; -1,5

3. t ning qanday qiymatlarida $2x^2 + tx + 8 = 0$ tenglama ildizga ega emas?

A $t > -8$ B $-8 < t < 8$

C $t > 3$ D $t < -8$ va $t > 8$

4. Funksiyaning aniqlanish sohasini toping: $y = \sqrt{3x - 2x^2}$.

A $[0; 1,5]$ B $(0; 1,5)$ C $[0; 1,5)$ D $(0; 1,5]$

5. ABC uchburchakning perimetri 10 ga teng. K nuqta AB tomonda yotadi, bunda AKC va BKC uchburchaklar perimetrlarining yig'indisi 16 ga teng. CK kesmaning uzunligini toping.

A 6 B 5 C 3 D 4

II qism

1. EKUK(45,81) ni toping.

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2. Ifodani standart ko'rinishda yozing: $\frac{(2ab^3)^2 \cdot 8a^4 \cdot b^2}{(2a^2b^2)^3}$.

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3. Tenglamalar sistemasini yeching: $\begin{cases} -x + 4y = 9 \\ 2x + y = 0 \end{cases}$.

... ..

4. Ifodani soddalashtiring : $1 - \sin^2 \alpha \cdot \operatorname{ctg}^2 \alpha$.

... ..

5. Rombning burchaklaridan biri 150° ga teng, balandligi esa 3,5 sm ga teng. Rombning perimetrini toping.

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III qism

1. Temir yo'l do'ngligining ko'ndalang kesimi teng yonli trapetsiya shaklida bo'lib yuqori asosi 6,7 m, do'nglikning balandligi 1,5 m, yon tomonining gorizont chizig'iga qiyaligi 45° . Temir yo'l do'ngligi ko'ndalang kesimining yuzini toping .

7 variant

I qism

1. Tengsizlikni yeching : $\frac{x-5}{x+7} < 0$.
A $(-7;5)$ B $(-7;-\infty)$ C $(5;+\infty)$ D $(-\infty;-7)\cup(5;+\infty)$
2. Tenglamani yeching : $\frac{x^2-4}{3} - \frac{5x-2}{6} = 1$.
A 1,5; -4 B -1,5; 4 C -1,5; -4 D 1,5; 4
3. t ning qanday qiymatlarida $2x^2 + tx + 2 = 0$ tenglama ikkita turli ildizga ega?
A $t < -4$ va $t > 4$ B $t > -4$ va $t > 4$
C $t > -4$ va $t < 4$ D $t < -4$ va $t < 4$
4. Funksiyaning aniqlanish sohasini toping : $y = \sqrt{2x - x^2}$.