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2022-2023-O'QUV YILIDA O'RTA
TA'LIM MAKTABLARINING **11-SINF**
O'QUVCHILAR UCHUN **MATEMATIKA**
FANIDAN MUSTAQIL SHUG'ULLANISH
Text
UCHUN

IMTIHON JAVOBLARI

2023

ESLATIB O'TAMIZ, MAZKUR JAVOBLAR SIZNI VAQTINGIZNI TEJASHGA VA
IMTIHONLARGA ESA KO'PROQ TAYYORLANISH UCHUN YORDAM BERADI.
IMTIHON JAVOBLARINI TIJORIY MAQSADLARDA FOYDALANISH MUMKIN EMAS.
VAQTNI QO'LDAN BOY BERMANG, TAYYORGARLIKNI HOZIRDAN BOSHLANG!

 @USTOZ

11-SINF MATEMATIKA
1-VARIANT

1. Hisoblang: $2,8 \cdot (2\frac{1}{3} : 2,8 - 1) + 2\frac{4}{5}$

$$2,8 \cdot (2\frac{1}{3} : 2,8 - 1) + 2\frac{4}{5} = 2\frac{1}{3}$$

$$1) 2\frac{1}{3} : 2,8 = \frac{4}{3} \cdot \frac{5}{14} = \frac{5}{6}$$

$$2) \frac{5}{6} - 1 = -\frac{1}{6}$$

$$3) 2,8 \cdot (-\frac{1}{6}) = -\frac{14}{5} \cdot \frac{1}{6} = -\frac{7}{15}$$

$$4) -\frac{7}{15} + 2\frac{4}{5} = 2\frac{5}{15} = 2\frac{1}{3}$$

2. Paxtadan 30% tola olinsa, 60 t tola olish uchun necha tonna paxta kerak?

$$x - 100\%$$

$$x = \frac{60 \cdot 100}{30} = 200 t$$

$$y: 200 t$$

$$60 t - 30\%$$

3. Agar $x > y > z$ bo'lsa, $|x - y| - |z - y| - |z - x|$ ni soddalashtiring.

$$|x - y| - |z - y| - |z - x| = x - y - y + z - x + z = 2z - 2y$$

4. $\sqrt{x} + \sqrt[4]{x} = 12$ tenglamani yeching.

$$\sqrt{x} + \sqrt[4]{x} = 12$$

$$\sqrt[4]{x} = t$$

$$t^2 + t - 12 = 0$$

$$t_1 = \frac{-1 + \sqrt{1 + 4 \cdot 12}}{2} = \frac{-1 + 7}{2} = 3$$

$$t_2 = \frac{-1 - 7}{2} = -4$$

$$\sqrt[4]{x} = 3$$

$$x = 81$$

$$y: x = 81$$

$$\sqrt[4]{x} = -4$$

Haq yech yog

5. $y = 2x + 5$ va $6x - 3y = 2$ to'g'ri chiziqlar Oxy tekisligining qaysi choragida kesishadi?

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$$\begin{cases} y = 2x + 5 \\ 6x - 3y = 2 \end{cases} \quad 1\text{-usul } y = 2x + 5$$

$$6x - 6x + 15 = 2$$

$$\begin{cases} y = 2x + 5 \\ 3y = 6x - 2 \end{cases} \quad \begin{matrix} y_1 = 2x + 5 \\ y_2 = 2x - \frac{2}{3} \end{matrix} \quad \begin{matrix} y_2 \text{ to'gri chiziq } y_1 \text{ t'lch.} \\ \parallel \text{ ko'chirish natijasida} \\ \text{hosil bo'lgan } y_1 \parallel y_2, \text{ demak kesishmaydi.} \end{matrix}$$

6. $3^1 \cdot 3^2 \cdot 3^3 \cdot \dots \cdot 3^x = \frac{1}{9^{-33}}$ tenglamani yeching.

$$3^1 \cdot 3^2 \cdot 3^3 \cdot \dots \cdot 3^x = \frac{1}{9^{-33}}$$

$$3^{\frac{1+x}{2} \cdot x} = 3^{66}$$

$$\frac{x^2+x}{2} = 66$$

$$x^2+x-132=0$$

$$D = 1 + 4 \cdot 132 = 529$$

$$x_1 = \frac{-1+23}{2} = 11 \quad x_2 = \frac{-1-23}{2} = -12$$

Javob $x = 11$.

7. $\left(\frac{\sin 100^\circ + \sin 20^\circ}{\sin 50^\circ} \right)^2$ ni hisoblang.

$$\left(\frac{\sin 100^\circ + \sin 20^\circ}{\sin 50^\circ} \right)^2 = \left(\frac{2 \sin 60^\circ \cos 40^\circ}{\sin 50^\circ} \right)^2 = \left(\frac{2 \cdot \frac{\sqrt{3}}{2} \cos 40^\circ}{\sin 50^\circ} \right)^2 = \left(\frac{\sqrt{3} \cos 40^\circ}{\cos 40^\circ} \right)^2 = (\sqrt{3})^2 = 3$$

8. $\log_2 \lg 100$ ni hisoblang.

$$\log_2 \lg 100 = \log_2 2 = 1$$

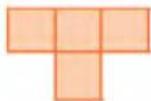
9. $f(x) = 1 - \frac{1}{\cos^2 3x}$ funksiyaning boshlang'ich funksiyasini toping.

$$f(x) = 1 - \frac{1}{\cos^2 3x} \quad \int \left(1 - \frac{1}{\cos^2 3x} \right) dx = x - \frac{1}{3} \operatorname{tg} 3x + c$$

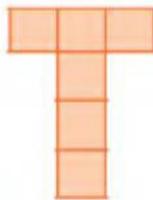
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10. Rasmda ketma-ketliklar berilgan.

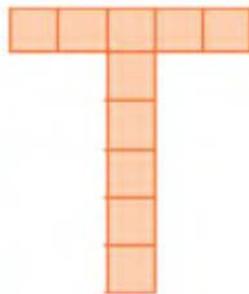
1-rasm



2-rasm



3-rasm



a) ushbu ketma-ketlik asosida quyidagi jadvalni to'ldiring.

Rasm tartibi	1	2	3	4	5	6	7
Kvadratlar soni	4	6	10	18	34	66	130

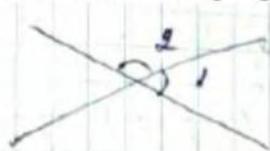
b) n -rasmdagi kvadratlar sonini aniqlovchi ifoda tuzing.

$$a_n = 2 + 2^n$$

c) 3-rasmda kvadratlar soni nechta bo'ladi?

$$a_{35} = 2 + 2^{35} = 34359738370$$

11. Ikki to'g'ri chiziqning kesishishidan hosil bo'lgan qo'shni burchaklar 5:7 nisbatda bo'lsa, shu burchaklarni toping.



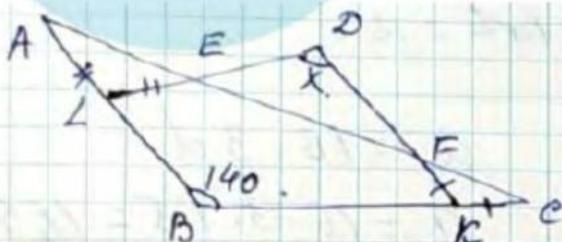
$$\begin{aligned} \angle 1 : \angle 2 &= 5 : 7 \\ 5x + 7x &= 180 \\ 12x &= 180 \\ x &= 15 \\ \angle 1 &= 5 \cdot 15 = 75^\circ \\ \angle 2 &= 7 \cdot 15 = 105^\circ \end{aligned}$$

12. Zalning uzunligi, eni va balandligining nisbati 5:3:1 kabi. Zalning uzunligi uning enidan 8 m ko'p. Zalning hajmini toping.



$$\begin{aligned} a : b : c &= 5 : 3 : 1 \\ a &= b + 8 \quad 5x = 3x + 8 \quad x = 4 \\ a &= 4 \cdot 5 = 20 \quad b = 3 \cdot 4 = 12 \\ c &= 4 \cdot 1 = 4 \\ V &= 20 \cdot 12 \cdot 4 = 960 \text{ m}^3 \end{aligned}$$

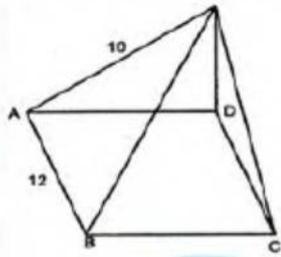
13. Noma'lum x burchakni toping.



fundan. $\triangle ABC \cong \triangle DEF$ ga

$$\begin{aligned} \angle ALE \text{ da } AL &= LE \text{ dan } \angle A = \angle E \\ \angle LEA &= \angle DEF, \text{ chunki vertikal.} \\ \triangle FKC \text{ dan } KF &= KC \\ \angle C &= \angle KFC \text{ ga} \\ \angle CFK &= \angle DFF \text{ chunki vertikal.} \end{aligned}$$

14. Muntazam piramidaning hajmini toping.



ABCD - muntazom

$$AB = 12$$

$$AT = 10$$

$$V_{\text{pir}} = ?$$

$$S_{\text{asos}} = 12^2 = 144$$

$$AO = \frac{1}{2} AC = \frac{1}{2} \cdot 12\sqrt{2} = 6\sqrt{2}$$

$$OT = \sqrt{10^2 - (6\sqrt{2})^2} = \sqrt{100 - 72} = \sqrt{28} = 2\sqrt{7}$$

$$V = \frac{1}{3} S_{\text{a}} \cdot H = \frac{1}{3} \cdot 144 \cdot 2\sqrt{7} = 96\sqrt{7} \quad (\text{kub birlik})$$

15. Har qanday uchta bir to'g'ri chiziqda yotmaydigan 6 ta nuqta berilgan. Shu 6 ta nuqta orqali nechta turlicha to'g'ri chiziq o'tkazish mumkin?

$\frac{n \cdot (n-1)}{2}$ formulaga asosan.

$$\frac{6 \cdot 5}{2} = 15 \text{ ta}$$

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**QOLGAN VARIANT IMTIHON JAVOBLARINI YUKLAB OLISH UCHUN
BIZNING TELEGRAM KANALIMIZGA OBUNA BO‘LING!**



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