

MAKAPUJ TEST 20 18

MATEMATIKA

4- QISM (yechimlar)

Yaxshiy qism.

31)  $f(2x-3) = 3x+5$       $f(f(1)) = ?$

$f(1) = 3 \cdot 2 + 5 = 11.$

$x = 2$

$f(11) = 3 \cdot 7 + 5 = 26$

$x = 7$      Javob: 26.

32)  $y = x^2 - |2x-4|$       $2x-4 \geq 0$

$x_0 = 3.$

$x \geq 2.$

$y = x^2 - 2x + 4 \Rightarrow$

$y' = 2x - 2$

$f'(x_0) = 2 \cdot 3 - 2 = 4.$

$y_0 = 9 - 6 + 4 = 7. \Rightarrow y_1 = 4(x-3) + 7$

$y = x^2 - |2x-4|$

$2x-4 < 0.$

$x < 2.$

$y = x^2 + 2x - 4.$

$x_0 = -2$

$y_0 = 9 - 6 - 4 = -1.$

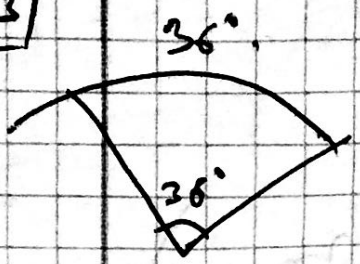
$f'(x_0) = 2x + 2 = -6 + 2 = -4.$

$y_2 = -4(x+3) - 1 \Rightarrow y_1 = y_2 \Rightarrow x = -1$

$\Rightarrow y_1 = y_2(-1) = -9.$      Javob: -9.

@axborotrafonchi

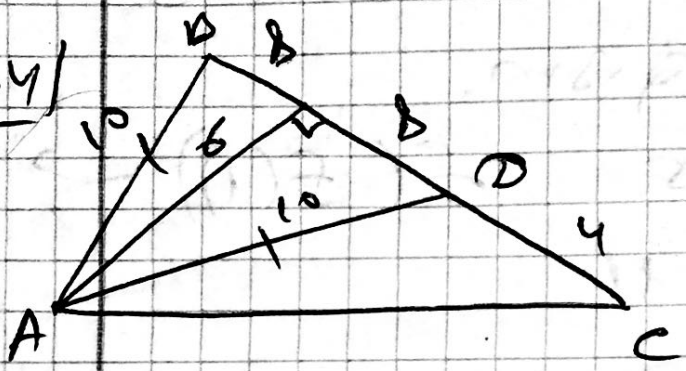
№33



$$36n = 360$$

$$n = 10$$

№34



$$S = \frac{20 \cdot 6}{2} =$$

$$= 60$$

№38

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

$$A(\sqrt[3]{e-1}; 2)$$

$$\int \frac{x^2}{x^3+1} dx = \frac{1}{3} \int \frac{1}{x^3+1} d(x^3+1) =$$

$$= \frac{1}{3} \int \frac{1}{t} dt = \frac{1}{3} \ln t + C$$

$$= \frac{1}{3} \ln(x^3+1) + C \Rightarrow A(\sqrt[3]{e-1}; 2)$$

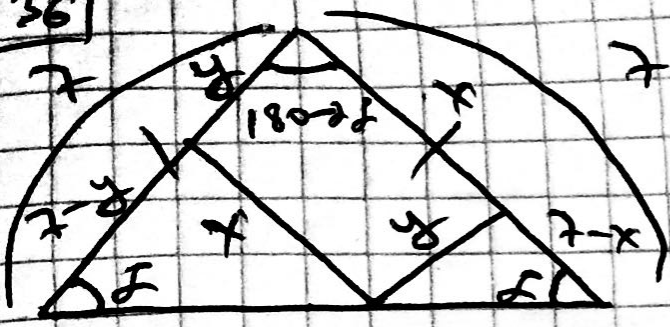
$$2 = \frac{1}{3} \ln(e-1+1) + C$$

$$2 = \frac{1}{3} + C \Rightarrow C = \frac{5}{3}$$

$$f(x) = \frac{1}{3} \ln(x^3+1) + \frac{5}{3}$$

@x6orofnan  
 @x6orofnan

$$\frac{36}{7}$$



$$x + y = 7$$

$$x + y = 7$$

$$P = 2(x + y) = 14$$

**Y:** Chizma chizib unga ko'ra hisoblashlarni bajaramiz:

$AB = AC = a$ ,  $A_1B_1 = A_1C_1 = b$ ,  $\angle BAC = \angle B_1A_1C_1 = 120^\circ \Rightarrow$   
 $BC = a\sqrt{3}$ ,  $B_1C_1 = b\sqrt{3}$ . Asoslaridagi balandliklar  $AD = \frac{a}{2}$  va

$A_1D_1 = \frac{b}{2}$ .  $D_1E = AA_1 = c$ ,  $ED = \frac{a-b}{2}$ .  $BCB_1C_1$  trapetsiyaning

balandligi  $DD_1 = h = \sqrt{c^2 + \frac{(a-b)^2}{4}} = \frac{\sqrt{4c^2 + (a-b)^2}}{2}$ .

$S_{yon} = S_{AA_1C_1C} + S_{AA_1B_1B} + S_{BCB_1C_1} = 2 \cdot \frac{a+b}{2} \cdot c + \frac{(a+b)\sqrt{3}}{2}$ .

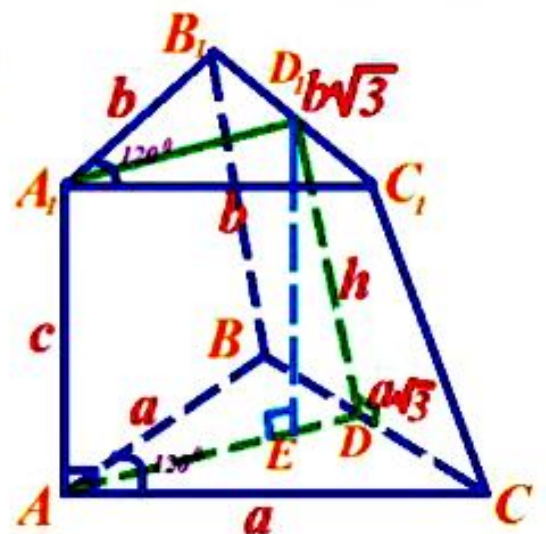
$\frac{\sqrt{4c^2 + (a-b)^2}}{2} = (a+b) \left( c + \frac{\sqrt{3}}{4} \sqrt{4c^2 + (a-b)^2} \right)$ . **Javob: A.**

A)  $(a + b) \left( c + \frac{\sqrt{3}}{4} \sqrt{4c^2 + (a - b)^2} \right)$

B)  $\frac{1}{4} (a + b) \sqrt{12c^2 + 4(a - b)^2}$

C)  $(a + b) \left( c + \sqrt{4c^2 + (a - b)^2} \right)$

D)  $c + \frac{\sqrt{3}}{4} \sqrt{4c^2 + (a - b)^2}$



$$\underline{238} / (x^2 + x) + (x^2 + 2x) \dots (x^2 + 19x) = 1425$$

$$\frac{x^2 + x + x^2 + 19x}{2} \cdot 19 = 1425$$

$$x^2 + 10x - 75 = 0$$

$$x_1 = 5$$

~~$$x_2 = -15$$~~

Answers:  $x = 5$

**Y:** Shartga ko'ra suhbatlashish uchun 1 soatda to'la quvvatning  $\frac{1}{4}$  qismidagi, kutish holatiga esa  $\frac{1}{12}$  qismidagi quvvat sarflanadi. Agar yo'lovchi poyezda  $x$  soat bo'lgan bo'lsa, u holda  $\frac{x}{2} \cdot \frac{1}{12} + \frac{x}{2} \cdot \frac{1}{4} = 1$  tenglik o'rinli bo'ladi. Bu tenglamani yechib,  $x = 6$  bo'lishini topamiz.

**Javob: D.**      **@Riyoziyot**

Ex 40 |  $\vec{a}, \vec{b}$ .

Collinearlik shomati :

$$\vec{a}(x_2; y_2) \quad \vec{b}(x_1; y_1).$$

$$\frac{x_1}{x_2} = \frac{y_1}{y_2} = k \Rightarrow \boxed{k \neq 0}$$

$$x_1 = kx_2$$

$$y_1 = ky_2$$

$$\vec{b} = (x_1; y_1) = (kx_2; ky_2) \Rightarrow$$

$$\Rightarrow k(x_2; y_2) \Rightarrow \vec{b} = k\vec{a}$$

Javob:  $\vec{b} = k\vec{a}$ .

@Pulc



#  
a

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