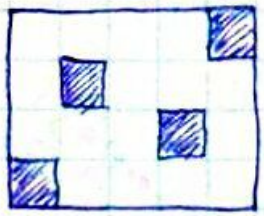
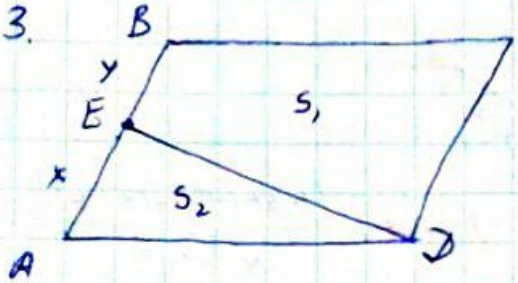
1.



Sohaning necha foizi bo'yalgan?

2. $\sin x = \sin 3x$ teng. yech

3.



$\frac{S_1}{S_2} = \frac{12}{5}$

$\frac{x}{y} = ?$

4. $\sqrt{\frac{mnp+4}{m} + 4 \cdot \sqrt{\frac{np}{m}}} : 2\sqrt{mnp}$

$m = 0{,}09;\ n = 0{,}16;\ p = 0{,}12$

5. $\frac{2(\operatorname{tg}615^\circ - \operatorname{tg}375^\circ) \cdot \sin^2 70^\circ \cdot \sin^2 30^\circ \cdot \sin^2 10^\circ}{\cos 330^\circ}$

6. $6{,}4 \cdot 11{,}1 - 6{,}4 \cdot 7{,}6 + 3{,}5 \cdot 6{,}7 + 4{,}9 \cdot 3{,}5$

7. $\frac{x^3}{x-2} \le \frac{9x}{x-2}$

8. $\left(\sqrt[4]{2}\right)^{4x-2} = \left(\sqrt{2}\right)^{-\frac{2x}{3}}$

9. $\sqrt{16 - 2\sqrt{15}} - \sqrt{15} + 4$

10. $\int x \cdot \cos x\, dx$

11. $\sin 5x = \sin 6x$

12. $\frac{27}{13} + \frac{77}{19} - \frac{93}{23}$

13. $a^2 + b^2 + c^2 + (a+b+c)^2 = 5$ b-ss

$(a+b)(b+c)(a+c)$ ning eng katta qiymatini top

14. $a+b+c = 3$, $ab+cc+bc = 2$

$a^3 + b^3 + c^3 - 3abc = ?$

15. Hisoblang.

$((x-3)! - (3-x)!) \cdot x!$

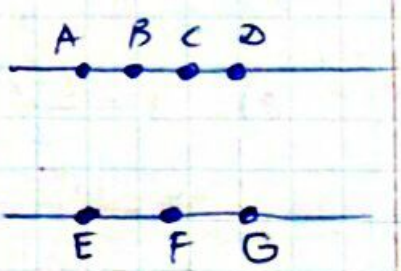
16. $\int x \cdot \sin 4x\, dx$

17. $(a-b)^2 - b^2$ kop. aj.

18. $2x^3 - 6x + 5 = 0$ $x_1, x_2, x_3 = ?$

19. $|x^2 - 3x + 4| \le |x^2 - 3x|$

20.

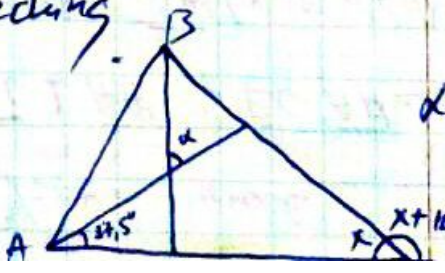


Nechta Δ yasash mumkin?

21. Agar $f(x) = \log_2 x^3 + 3$ b-ss

$f(4) + f(x) = f\left(\frac{1}{x}\right)$ tenglikni yeching.

22.

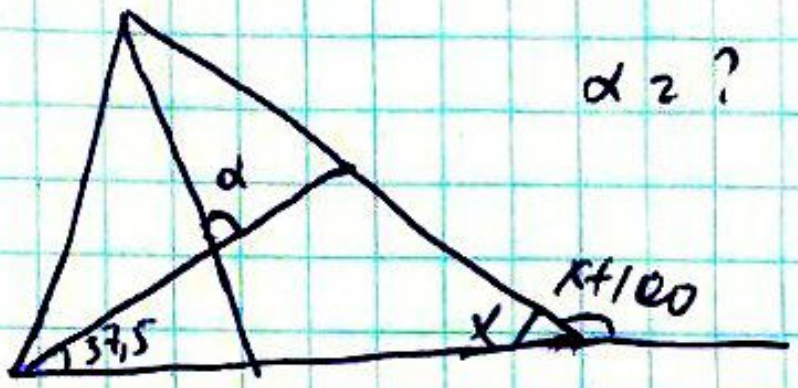


$\alpha = ?$

$\int x \cos 3x \, dx = ?$

$f(x) = 2 + \log_3 x^3$

$f(9) = f(x) + f\left(\frac{1}{x}\right)$ $\quad x = ?$



$\alpha = ?$

Berk idishdagi ideal gazning bosimi T marta ortsa ichki energiyasi qanchaga ortadi.

① $f(x) = \log_2 x$ $A(1;0)$ $B(2;1)$. ac

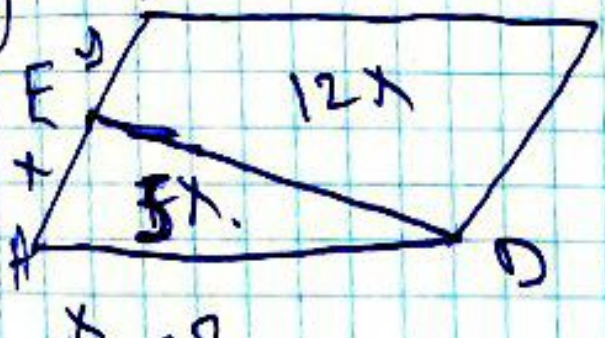
dan ötuvchi parallel bolgan

ga uinma tenglamai hayfitsin top

② $2(\operatorname{tg}615 - \operatorname{tg}375) \cdot \sin^2 70 \cdot \sin 50 \cdot \sin^2 10 : \cos 30$

$m = 25$ $n = 0{,}4$ $p = 49$.

③ $\left(\sqrt{\frac{mnp+4}{m}} \cdot \sqrt{\frac{16np}{m}}\right) : \left(\frac{2(\sqrt{mnp}-2)}{(\sqrt[4]{2})^{4x+7}} \leq \sqrt{2}^{\frac{-2x}{3}}\right)$

④ 

$\frac{x}{y} = ?$.

$\sin 3x = \sin 2x$. javob gayti

3. Qaysi javobda bayrda tarod sanoatda foydalanilgan.

A: Kornodin ko'rlari qaro. Qo'llari xinoan. kolbig

4. Qaysi javobda. To'la qalamga mansub to'plam lar berilgan.

a) Yuragimga yaqin bilimlar. Kuylarim. siz

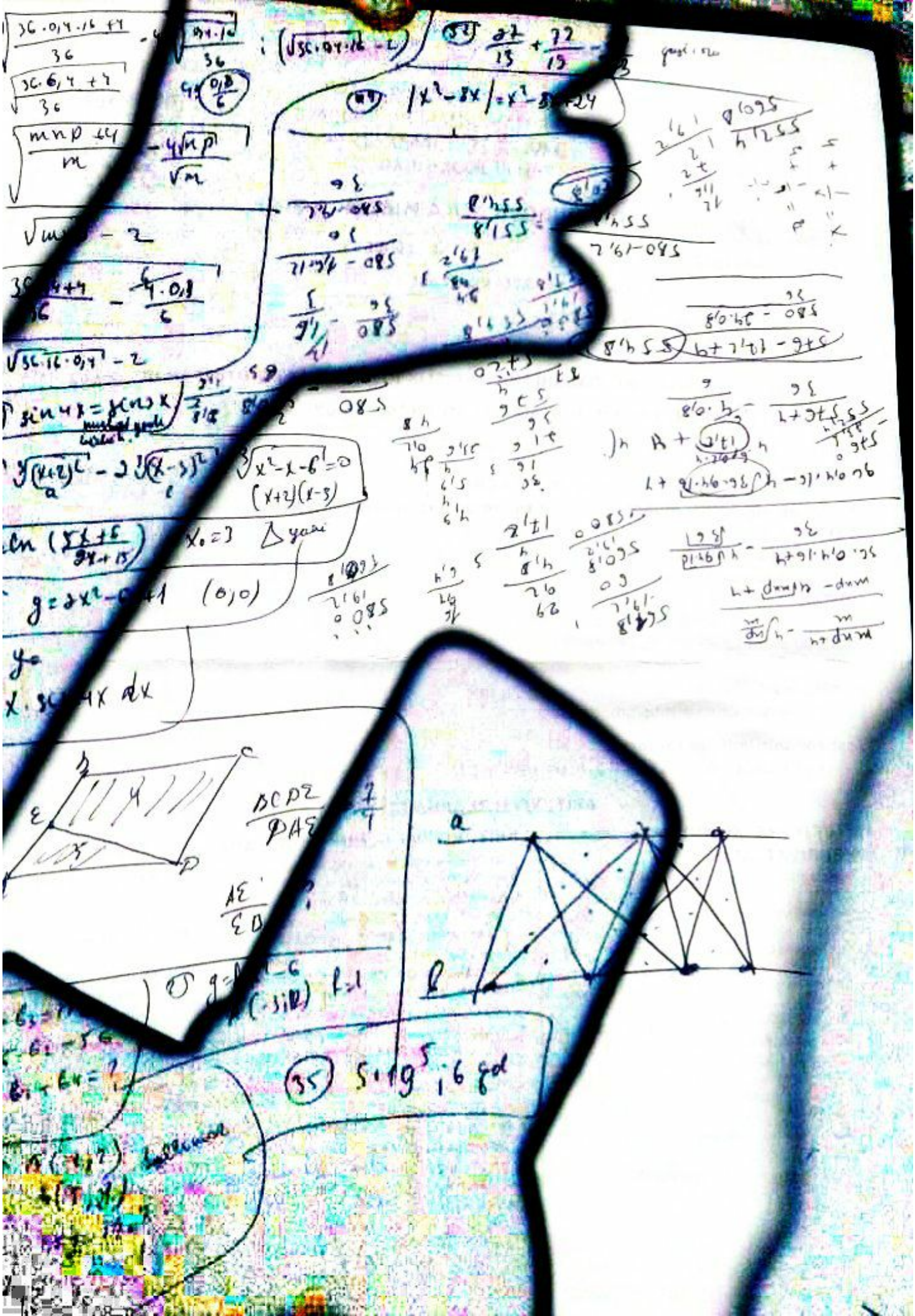
b. Qiromo. Turk qo'shiqlar

c) Yoshligim. (Tabasum)

D. Ko'ka buyik Hamma emas allari

f(x) = log 2x funksiyaning M(4;2) nuqtasidan o'tuvchi to'g'ri chiziqqa parallel bo'lgan urinmaning burchak koeffitsiyentini toping.

a) $\frac{1}{2}$ b) $\frac{2}{3}$ c) $\frac{1}{3}$ D) $\frac{1}{}$



$g + f(x) = f\left(\frac{1}{x}\right)$

2. Agar $f(x) = \log_{-x^3} + 3$ bolsa.
$f(4) + f(x) = f\left(\frac{1}{x}\right)$ ni toping.

1) $\sin 5x = \sin 6x$ Daqsin aniqlang?

$\int x \cos x \, dx \longrightarrow$

$y = \ln\left(\frac{5x-12}{4x-15}\right)$ $-\frac{1}{9}$ x_0

$y = 3x^2 - 6x + 7$ $(0;0)$.

H_1 : cb lang

$$\left((x-2)! + (3-x)! \right)! \cdot x! =$$

$a^2+b^2+c^2+(a+b+c)^2=8$ бўлса

$(a+b)(b+c)(c+a)$ нинг энг

катта қийматини топинг.

1. $\int x \sin 4x \, dx$.

2. $y = kx^2 - 3 \qquad (-2; 9) \qquad k = ?$

3

4

5. $\frac{3^3}{x \cdot 2} \leq \frac{16x}{x \cdot 2}$ Butun yech. toping.

6. $(a \cdot 6)^2 - 6^2$ Ko'paytuvchiga ajrating.

$$2x^3 - 6x + 5 = 0.$$

$$x_1, x_2, x_3 = ?$$

$a+b+c=3$

$ab+ac+bc=2$

$a^3+b^3+c^3-3abc=?$

1) $\frac{(x+1)!}{(x-4)!} + \frac{(x+1)!}{(x-2)!} = (x-3)(x-2)(x-1) + (x-1)\cdot x\cdot(x+1) =$

$= (x-1)(x^2-5x+6+x^2+x) = (x-1)(2x^2-4x+6)$

---

2) $100x > \sqrt{10^{3\lg x}}$ A.S $\underline{x>0}$

$100x > 10^{\frac{3\lg x}{2}}$

$\lg 100 + \lg x > \frac{3}{2}\lg x \cdot \lg 10$

$2 + \lg x > \frac{3}{2}\lg x$ $\quad x < 10^4$

$2 > \frac{1}{2}\lg x$ $\quad \lg x < 4$ $\quad$ ş $\quad (0 : 10^4)$

---

3) $(2+\sqrt{3})^{x^2} + (2-\sqrt{3})^{x^2} = 4$

$\frac{1}{(2-\sqrt{3})^{x^2}} + (2-\sqrt{3})^{x^2} = 4$ $\quad \boxed{(2-\sqrt{3})^{x^2} = t}$

$\frac{1}{t} + t - 4 = 0$ $\quad t^2 - 4t + 1 = 0$

$\Delta = 16 - 4 = 12$

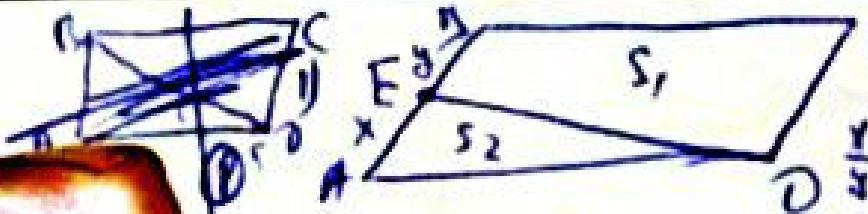
$t_1 = \frac{4+2\sqrt{3}}{2} = 2+\sqrt{3}$

$t_2 = 2-\sqrt{3}$

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

$(2-\sqrt{3})^{x^2} = (2-\sqrt{3})^{-1}$ $\quad x^2 = -1$ $\quad \emptyset$

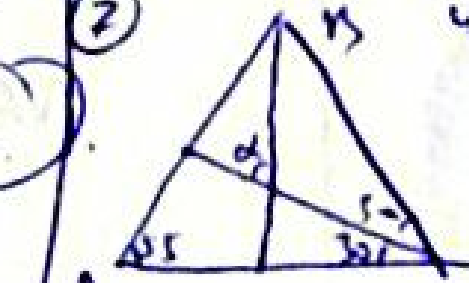
$(2-\sqrt{3})^{x^2} = (2-\sqrt{3})^{1}$ $\quad x^2 = 1$ $\quad \boxed{x = \pm 1}$



$\frac{S_1}{S_2} = \frac{12}{5}$

$\frac{x}{y} : ?$

$\frac{5}{4} + \frac{7}{10} + \frac{4}{5} + \frac{10}{7}$



$4 : 1 : 5 \quad : \quad 3 : 1 : 2$

$5 : 1 : 4$

$x = \frac{1}{2} \qquad x = 2$

$\frac{13}{4} = \frac{1}{4}$

$b_1 \cdot b^2 = 112$

$b_1 \cdot b = 56$

$x = \log_3 5^y$

$\frac{x}{y} = \log_3 5$

$9^{\log_3 5} - 125^{\log_5 3} = 25 - 27_2 - 2$

(D)

$A = \{(x, y) | x^2 + y^2 = 4$

$B = \{(x, y) | x - y = 2$

$16 - 2\sqrt{15} - \sqrt{15} + 4$

$16 - 2\sqrt{\frac{15}{3}} - \sqrt{\frac{15}{3}} - 4$

$16 - 2\sqrt{5} - \sqrt{5} - 4$

$y = \ln\left(\frac{5x - 12}{4x - 15}\right) - \frac{1}{9}$

$x_0 = -3$

$2(\operatorname{tg} 615 - \operatorname{tg} 375°) \cdot \sin^2 70° \cdot \sin 25° \sin 40° : \cos 330°$

$y = 3x^2 - 6x + 7 \quad (0; 0)$

$|x^2 + 10x| = x^2 + 10x + 18$

$6,4 \cdot 18,1 - 6,4 \cdot 2,6 + 3,5 \cdot 6,7 + 4,9 \cdot 3,5$

$y = \ln\left(\frac{5x - 12}{4x - 15}\right) - \frac{1}{9}$.

$\frac{x^3}{x - 2} \leq \frac{9x}{x - 2}$

$(\sqrt[4]{2})^{4x-2} = (\sqrt[3]{2})^{\frac{-2x}{3}}$

$\sqrt{16 - 2\sqrt{15}} - \sqrt{15} + 4$

~~$S - \frac{x}{3} \sin 3x + \frac{1}{9} \cos 3x + C$~~

$\int x \cdot \cos x \, dx$

$(a - b)^2 - c^2$

$\sin 5x = \sin 6x$

$\int \frac{27}{13} + \frac{27}{19} - \frac{93}{23}$

$\bar{a}(x; 2) \perp \bar{b}(-5; y)$ $2xy$

1. $x^2-2020x+2019<0$. Butun yechimlari yigindisini toping.

2. $x^2+2020x+2019\geq 0$. Eng katta manfiy butun va eng kichik musbat butun yechimlari yigindisini toping.

3. $ax+\frac{|x|}{x}=2a+5$ tenglama a ning qanday qiymatida 2 ta yechimga ega?

4. $x^2(a^2+b^2+9)+2(a+b+3)x+3=0$. kv. tenglama haqiqiy yechimlarga ega bolsa, $a+b=?$

5. $x^2+ax+5=0$ va $x^2-5x-a=0$ kv. tenglamalar umumiy ildizga ega bolsa, a ni toping.

6. $0<a<1$ bolsa, $y=\log_a(x+1)$ funksiya grafigi qaysi choraklardan otadi?

7. $a>1$ bolsa, $y=\log_a|x+1|$ f-ya grafigi qaysi choraklardan otadi?

8. $y=\frac{\sqrt{x^2+x-6}}{x^2-4}$ funksiyaning aniqlanish sohasini toping.

9. $y=\sqrt{\frac{\sqrt{17-15x-2x^2}}{x+3}}$ aniqlanish soha?

10. $y=\arcsin 3^x$ aniqlanish soha?

11. $y=\sqrt{(\sin x+\cos x)^2-1}$ arg. soha?

12. $y=\frac{\log_3(x^2+1)}{\sin^2 x-\sin x+0{,}25}$ aniqlanish sohasini toping.

13. $y=\sqrt{\lg\frac{3-x}{x}}$ aniqlanish soha?

14. $y=\arcsin\left(\frac{x-3}{2}\right)-\lg(4-x)$ aniqlanish sohasini toping.

15. $y=\log_{\cos x}\frac{2\lg x+2}{-x}$ arg. soha?

16. $f(x)=x^2-ax+3$ va $g(x)=ax-1$ bolsa, $f(g(x))=?$

17. $y=x^2+\frac{1}{x}$ funksiyaning $x=\frac{1}{2}$ nuqtadagi $\Delta x=\frac{1}{2}$ orttirmasini toping.

18. $y=x^2-\frac{1}{x}$ funksiyaning $x=-\frac{1}{2}$ nuqtadagi $\Delta x=0{,}2$ orttirmasini toping.

19. $\overline{367x35}$ son 75 ga qoldiqsiz bolinsa, x ni toping.

20. $\operatorname{arcctg}(\operatorname{tg}(-37))=?$

21. $\operatorname{arctg}\sqrt{\pi}+\operatorname{arcctg}\left(\frac{1}{\pi}\right)=?$

22. $\sin(2\arcsin\frac{3}{5})=?$

23. $\arcsin(\sin\frac{25\pi}{7})=?$

24. $\operatorname{arcctg}(\operatorname{tg}\frac{25\pi}{7})=?$

25. $\arccos(\cos\frac{25\pi}{7})=?$

26. $\sqrt{\frac{1+\sin\alpha}{1-\sin\alpha}}+\sqrt{\frac{1-\sin\alpha}{1+\sin\alpha}}$ ni soddalashtiring. Bunda $\frac{\pi}{2}<\alpha<\frac{3\pi}{2}$

27. $\sqrt{\frac{1+\cos\alpha}{1-\cos\alpha}}+\sqrt{\frac{1-\cos\alpha}{1+\cos\alpha}}$ ni soddalashtiring. Bunda $\frac{\pi}{2}<\alpha<\frac{3\pi}{2}$

Yangi mavzu

M.F.A 2019

quydagi reaksiyadagi [illegible] X [illegible]

$^{220}_{86}Rn \Rightarrow X + ^{216}_{84}Po$

A) ^3_1H B) ^4_2He C) ^1_1H D) ^2_1H

Машин тезлиги 20 m/s

[illegible] диаметри 0,5m

енг юқори нуқтасининг

A 800 B 1600 C 600 D 3200

A 648 B 324 C 2592 D 1296

[illegible] 279

агар $F(x) = \log_2 x^3 + 3$

бўлса $F(y) + F(x) = F\left(\frac{1}{x}\right)$ тенгламани

A $\frac{1}{\sqrt[3]{4}}$ B $\frac{1}{4}$ C $\sqrt[9]{4}$ D $\frac{1}{2\sqrt{2}}$

$(a-b)^2 - c^2$ кўпайтувчиларга ажрат.

$y = \ln\left(\frac{5x-12}{4x-15}\right)$ функция графиги абсциссаси $x_0 = 3$

ҳосил бўлган △ юзини топ. C $\frac{2}{9}$ D $\frac{1}{3}$ A $\frac{1}{9}$ B $\frac{1}{6}$

$\frac{35}{12} - \frac{96}{19} + \frac{70}{23}$ ифоданинг қуймати бўйидаги қайси оралиқда ётади.

A 1;2 B 3;4 C 2;3 D 0;1

$\int x \cdot \sin 2x\, dx$ интегрални хисобла.

$\left(\sqrt[4]{2}\right)^{4x+5} = \left(\sqrt{2}\right)^{-\frac{2x}{3}}$ тенгламани ечинг.

A $\frac{15}{16}$ B $-\frac{9}{16}$ C $\frac{17}{16}$ D $-\frac{21}{16}$.

$y = x^2 - 5x + 9$ квадрат функцияни (0;0) нуқтага нисбатан симметрик функциясини аниқла.

$\sqrt[3]{(x+3)^2} - 2\sqrt[3]{(x-1)^2} + \sqrt[3]{x^2+2x-3} = 0$ тенгламани ечинг.

A -2,

$\sqrt{6-2\sqrt{5}} - \sqrt{5} + 2$. D 2

$|x^2 - 11| = x^2 - 11x + 48$ тенгламанинг ечимлари илдизлари кўпайтмасини топинг

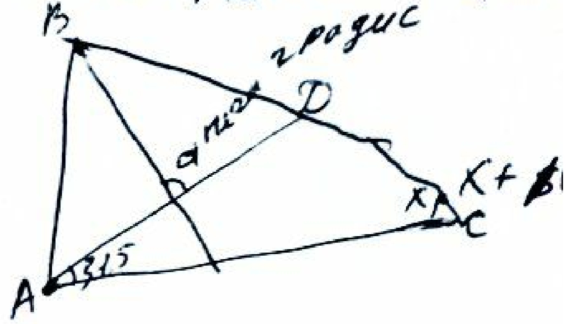
$\frac{x^3}{x-2} \le \frac{16x}{x-2}$ тенгламанинг бутун ечимини топинг

A 6 B 9 C 8 D 7.

$(\operatorname{tg} 435 - \operatorname{tg} 375) \cdot \sin^2 70 \cdot \sin$ [illegible]

: sin 120 хисобланг..

Расмда ABC △ бир ва унинг A [illegible] биссектриси ва [illegible] α ни [illegible] градус

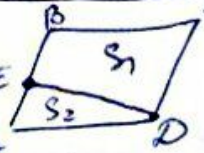


(28) $\sqrt{16-2\sqrt{15}} - \sqrt{15} + 4$

3 : 2

5 : 4

95 42 3554

① 

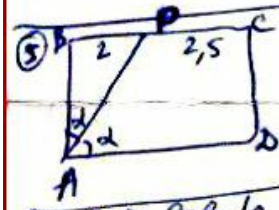
$S_1 : S_2 = 12 : 5$
$AE : EB = ?$
A) $\frac{4}{5}$ B) $\frac{10}{7}$ C) $\frac{5}{4}$ D) $\frac{7}{10}$

② $f(x) = \log_3 x$ funksiyaning (1;0) va (3;1) (.)laridan o'tuvchi to'g'ri chiziqqa // bo'lgan urinma tenglamasining Δ $K = ?$
A) $\frac{2}{3}$ B) $\frac{1}{2}$ C) $\frac{1}{3}$ D) $\frac{1}{4}$

③ 

$h = 12$
$d = 15$
$r = ?$
A) 4,5 B) $3\sqrt{3}$
C) $3\sqrt{2}$ D) 9

④ Tenglashi piramida
$h_1 : h_2 : h_3 = 9 : 4 : 1$
$S_{o_1} : S_{o_2} : S_{o_3} = ?$
A) 1:2:3 B) 1:4:9
C) 4:9:36 D) 1:16:81

⑤ 

$S_{apec} = ?$ 7 ; 6 ; 5,5 ; 5
A B C D

⑥ Tekislikda o'zaro kesishmaydigan a va b to'g'ri chiziqlar berilgan a to'g'ri chiziqda 2ta B ta b da 6 ta A to'g'ri chiziqda (.) lardan (.) larda (.) berilgan. Uchlari bu (.) larda bo'lgan jami nechta Δ mavjud
30. 36 32 35

⑦ $7 \cdot 17^5$ ni 8 bo'lgandagi qoldiq.
1 6 3 7

⑧ $y = \ln\left(\frac{5x-12}{4x-15}\right)$ $x_0 = -3$ urinma o'tqazilgan
Bu urinma va koordinata o'qlari hosil qilgan $S_\Delta = ?$ $\frac{1}{3}$ $\frac{1}{9}$ $\frac{1}{6}$ $\frac{2}{9}$

⑨ $y = 3x^2 - 6x + 7$ (0;0) ga nisbatan simmetriya $f(x) = ?$
$-3x^2+6x-7$; $3x^2+6x+7$
$-3x^2-6x-7$; $3x^2-6x+7$

⑩ $\frac{x^3}{x-2} \le \frac{16x}{x-2}$ butun yechimlari soni 9; 6; 7; 8

⑪ $y = kx^2 - 6$ $A(-3;12)$ $k = ?$
3 2 ; -2 ; -3

⑫ $(a-b)^2 - c^2 = ?$

⑬ $\sqrt[3]{(x+3)^2} - 2\sqrt[3]{(x-1)^2} + \sqrt[3]{x^2+2x-3} = 0$
$-\frac{5}{3}$; $\frac{5}{3}$; 1 ; -2

⑭ $\frac{40}{13} + \frac{77}{19} - \frac{93}{23}$ ozaliqlardan qaysi
(2;5) (3;4) (0;1) (1;2)

⑮ $(\operatorname{tg}435^\circ + \operatorname{tg}375^\circ)\sin^2 70^\circ \cdot \sin^2 50^\circ \cdot \sin^2 10^\circ$ ifodaning qiymati
$\frac{1}{4}$ $\frac{1}{8}$ $\frac{1}{16}$ 1

⑯ $b_6 - b_3 = 112$ $b_5 - b_2 = 56$, $b_1 + b_4 = ?$
40 20 36 68

⑰ $m = 0{,}09$, $n = 0{,}16$, $p = 0{,}12$
$\left(\sqrt{\frac{mnp+4}{m}} + 4\sqrt{\frac{np}{m}}\right) : \left(2 + \sqrt{mnp}\right)$
$\frac{10}{3}$ $\frac{5}{4}$ 0,48 0,12

⑱ $\int x \cdot \sin 2x\, dx = ?$

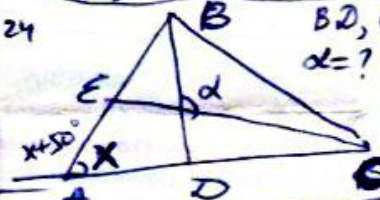
⑲ $A = \{(x;y) \mid x^2 + y^2 = 4,\ x, y \in R\}$
$B = \{(x;y) \mid x + y = 2,\ x, y \in R\}$, $A \cap B$ to'plamni top
$\{(-2;0);(0;2)\}$ $\{(-2;0);(0;-2)\}$
$\{(2;0);(0;2)\}$ $\{(2;0);(0;2)\}$

⑳ $\left(\sqrt[4]{2}\right)^{4x+3} = \left(\sqrt{2}\right)^{-\frac{2x}{3}}$ $x = ?$
$-\frac{21}{16}$; $-\frac{15}{16}$; $-\frac{9}{16}$; $-\frac{17}{16}$

㉑ $f(x) = 2 + \log_3 x^2$
$f(9) = f(x) - f\left(\frac{1}{x}\right)$ tenglamani yech
$3\sqrt[3]{3}$; 3 ; $\sqrt[3]{9}$; $\sqrt[3]{5}$

㉒ $\sin 2x = \sin 3x$ eng kichik + yechimi $\frac{\pi}{5}$ $\frac{4\pi}{5}$ $\frac{2\pi}{5}$ $\frac{\pi}{5}$

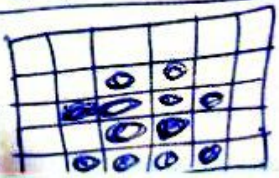
㉓ $46 \cdot 7{,}7 + 2{,}6 \cdot 3{,}8 + 4{,}4 \cdot 16{,}2 = 4{,}7 \cdot 2{,}4$
57,5 115 65,5 48,5

㉔ 

BD, CE bissektrisa
$\alpha = ?$ 122,5 ; 135,5 ; 112,5 ; 105,5°

㉕ $a = \frac{\sqrt{2}(1+3\sqrt{2})}{4}$ $\frac{\frac{2}{2}}{1-\frac{2}{2+\frac{1}{a-2}}} = ?$
6 ; $\frac{\sqrt{2}+2}{2}$; $\sqrt{2}$; $\frac{\sqrt{2}}{2}$

㉖ $|x^2+9x| = x^2+9x-20$ Xaqiqiy ildizlar yig'indisi
-9 : 9 $\emptyset$ -10.

㉗ 
Bo'yalgani necha % ni tashkil qiladi