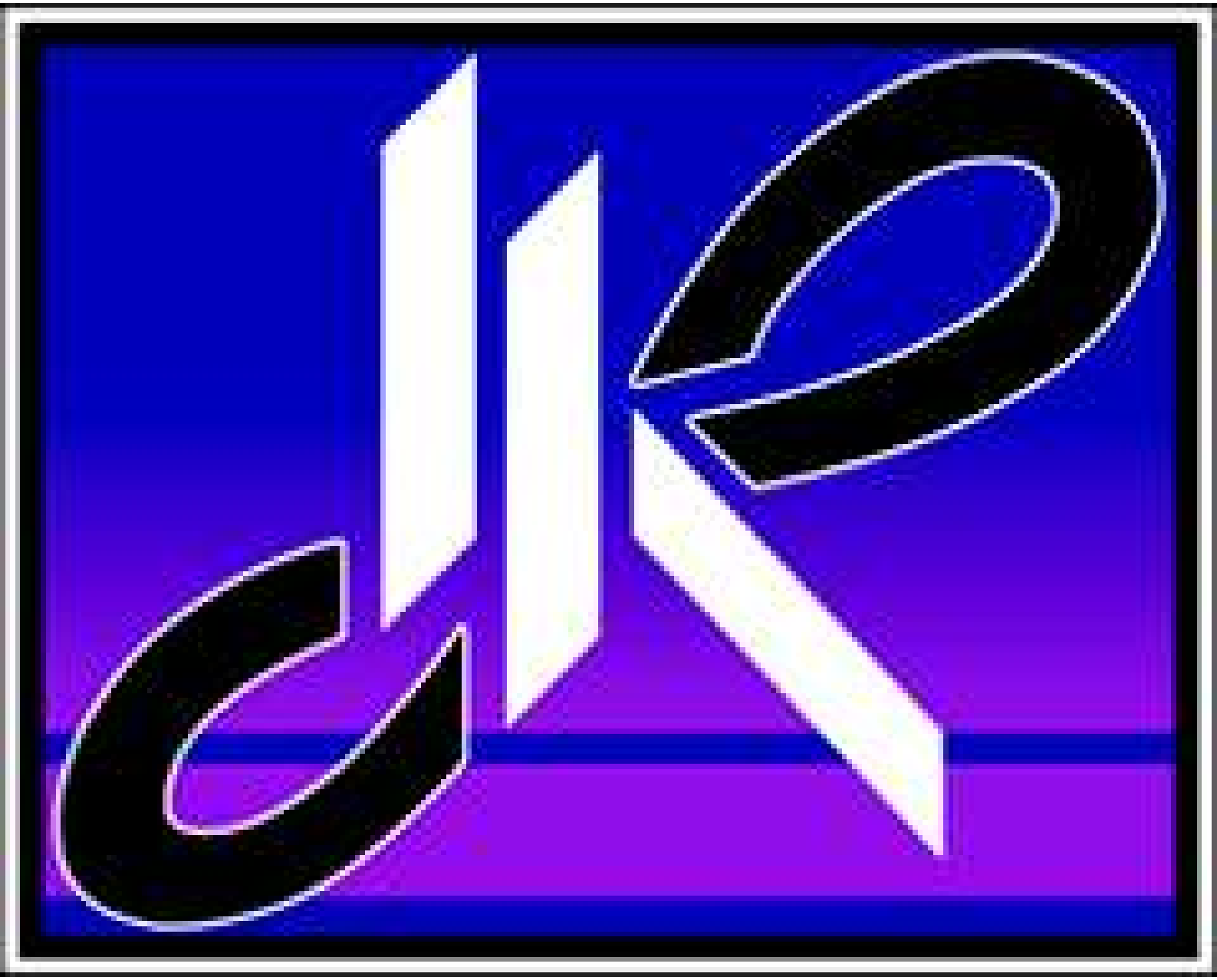

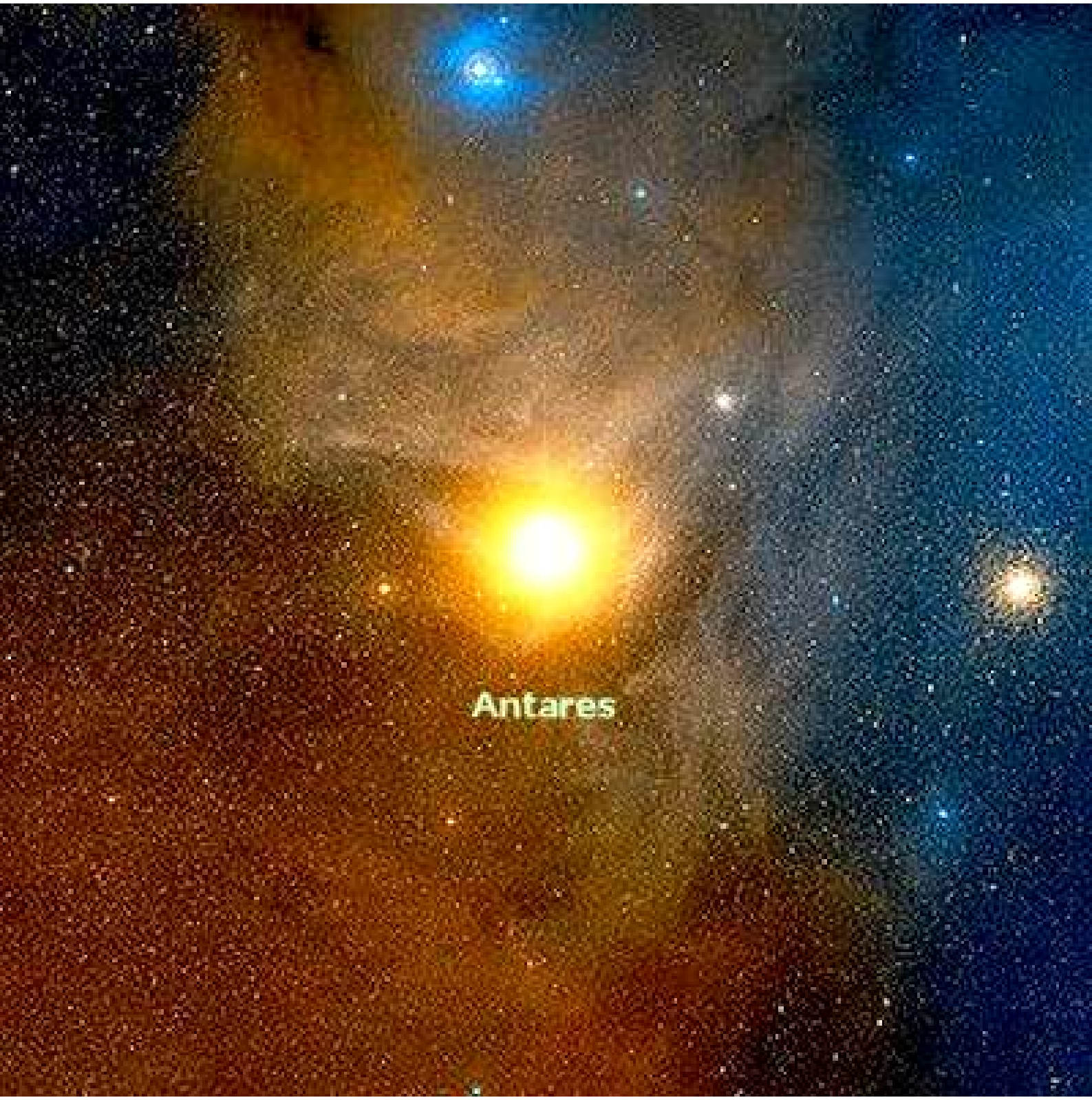

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ABITURIYNT–2010.

(2010.6.1)

2324252627.....7172 **sonning raqamlar yig'indisini toping.**

Yechish.

$2\times7=14.$

$7\times3=21.$

$30+40+50+60=180+14+21=215.$

$5\times45=225.$

$215+225=440.$ **Javob;** $440.$

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(2010.6.2)

$67\times16\times22\times83+25\times16\times41$ yig'indini 7 ga bo'lgandagi qoldiqni toping.

Yechish.

Qoldiqli bo'lish qoidasiga binoan.

a–bo'luvchi, b–bo'linma. c–qoldiq.

$a\times b+c$.

$67=7\times9+4\rightarrow4.$

$16=7\times2+2\rightarrow2.$

$22=7\times3+1\rightarrow1.$

$83=7\times11+6\rightarrow6.$

$25=7\times3+4\rightarrow4.$

$41=7\times5+6\rightarrow6.$

$4\times2\times1\times6+4\times2\times6=48+48=96.$

$96=7\times13+5\rightarrow5.$ Javob; 5

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ABITURIYNT–2010.

(2010.6.3)

$\alpha=0,2(223)$, b$=0,22(23)$ va c$=0,(2223)$ sonlarni o'sish tartibida yozing.

Yechish.

$$\alpha=0,2(223)=\frac{2223-2}{9990}=\frac{2221}{9990}=0,223223....$$

$$b=0,22(23)=\frac{2223-22}{9900}=\frac{2201}{9900}=0,222323...$$

$$c=0,(2223)=\frac{2223}{9999}=0,2232223....$$

Javob; $c<\alpha<b$.

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ABITURIYNT–2010.

(2010.6.4)

Hisoblang.

$$\frac{265^2-361}{284}.$$

Yechish.

$361=19^2.$

$\alpha^2-b^2=(a-b)(a+b)$

$$\frac{265^2-19^2}{284}=\frac{(265-19)(265+19)}{284}.$$

$$\frac{246\times 284}{284}=246.$$ Javob; 246.

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ABITURIYNT–2010.

(2010.6.5)

Soddalashtiring.

$$\frac{x^2-1+2(xy-1)-(-y^2+1)}{2-x-y}.$$

Yechish.

$$\frac{x^2-1+2xy-2+y^2-1}{-x-y+2}=\frac{x^2+2xy+y^2-4}{-(x+y-2)}.$$

$$\frac{(x+y)^2-4}{-(x+y-2)}=\frac{(x+y-2)(x+y+2)}{-(x+y-2)}=-(x+y+2).$$

Javob; $-x-y-2$.

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ABITURIYNT−2010.

(2010.6.6)

Hisoblang.

$$\frac{\sqrt{2}-1}{\sqrt{10}+\sqrt{6}-\sqrt{5}-\sqrt{3}}+\frac{\sqrt{5}+2}{2\sqrt{5}-\sqrt{15}-2\sqrt{3}+5}.$$

Yechish.

$$\frac{\sqrt{2}-1}{\sqrt{2}(\sqrt{5}+\sqrt{3})-(\sqrt{5}+\sqrt{3})}+\frac{\sqrt{5}+2}{2(\sqrt{5}-\sqrt{3})+\sqrt{5}(\sqrt{5}-\sqrt{3})}.$$

$$\frac{\sqrt{2}-1}{(\sqrt{2}-1)(\sqrt{5}+\sqrt{3})}+\frac{\sqrt{5}+2}{(\sqrt{5}+2)(\sqrt{5}-\sqrt{3})}=\frac{1}{\sqrt{5}+\sqrt{3}}+\frac{1}{\sqrt{5}-\sqrt{3}}=\frac{\sqrt{5}-\sqrt{3}+\sqrt{5}+\sqrt{3}}{(\sqrt{5}-\sqrt{3})(\sqrt{5}+\sqrt{3})}.$$

$$\frac{2\sqrt{5}}{5-3}=\frac{2\sqrt{5}}{2}=\sqrt{5}.$$ **Javob;** $\sqrt{5}$.

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ABITURIYNT–2010.

(2010.6.7)

Mahrajni irratsionallikdan qutqaring.

$$\frac{6}{\sqrt[6]{81}-\sqrt[6]{3}}.$$

Yechish.

$$\frac{6}{\sqrt[6]{9^2}-\sqrt[6]{3}}=\frac{6}{\sqrt[3]{9}-\sqrt[6]{3}}=\frac{6\sqrt[3]{9^2}+\sqrt[6]{3^5}}{(\sqrt[3]{9}-\sqrt[6]{3})(\sqrt[3]{9^2}+\sqrt[6]{3^5})}.$$

$$\frac{18\sqrt[3]{3}+\sqrt[6]{243}}{9-3}=3\sqrt[3]{3}+\sqrt[6]{243}.$$ **Javob;** $3\sqrt[3]{3}+\sqrt[6]{243}.$

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ABITURIYNT–2010.

(2010.6.8)

$x^2-12x+q=0$ tenglamaning ildizlaridan biri ikkinchisidan 2 martta katta. Bu tenglamaning koeffitsiyentlari yig'indisini toping.

Yechish.

$ax^2+bx+c=0$

$x_1+x_2=-\frac{b}{a}.\ x_1x_2=-\frac{c}{a}.$

$x_1+x_2=12.$

$x_1=2x_2.$

$2x_2+x_2=12. \Rightarrow 3x_2=12. \Rightarrow x_2=\frac{12}{3}=4.$

$x_1=2x_2=2\times4=8.$

$Q=x_1x_2=8\times4=32.$

$1-12+32=21.$ Javob; 21.

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ABITURIYNT–2010.

(2010.6.9)

$$\begin{cases} \frac{5\alpha}{2}+\frac{4}{b}=21 \\ \frac{4\alpha}{3}+\frac{2}{b}=11 \end{cases} \text{ bo'lsa, } \alpha+b=?$$

Yechish.

$$2\left(\frac{4\alpha}{3}+\frac{2}{b}=11\right) \Rightarrow \frac{8\alpha}{3}+\frac{4}{b}=22$$

$$\frac{5a}{2}-\frac{8\alpha}{3}+\frac{4}{b}-\frac{4}{b}=21-22.$$

$$\frac{15a-16a}{6}=-1. \Rightarrow -\frac{a}{6}=-1. \ a=6.$$

$$\frac{5a}{2}+\frac{4}{b}=21. \Rightarrow \frac{5\times 6}{2}+\frac{4}{b}=21. \ 15b+4=21b.$$

$$15b-21b=-4. \ -6b=-4. \ b=\frac{4}{6}=\frac{2}{3}.$$

$$a+b=6+\frac{2}{3}=\frac{18+2}{3}=\frac{20}{3}=6,(6) \text{ Javob; } 6,(6).$$

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ABITURIYNT–2010.

(2010.6.10)

$5 \leqslant x \leqslant 9,\ 4 \leqslant y \leqslant 11$ bo'lsa, $\dfrac{5x+7y}{2y}$ ning eng katta qiymatini toping.

Yechish.

$$\frac{5x}{2y}+\frac{7y}{2y}=\frac{5x}{2y}+\frac{7}{2}.$$

$x=5.\ y=4. \to 6{,}625.$

$x=9,\ y=11. \to 5{,}54545.$

$x=5.\ y=11. \to 4{,}63636.$

$x=9.\ y=4. \to 9{,}125.$ Javob; 9,125.

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ABITURIYNT–2010.

(2010.6.11)

x=$\sqrt{2}$, **y**=$\sqrt[3]{3}$, **z**=$\sqrt[4]{4}$ **bo'lsa,**

$|x-y|+|z-y|+|y-x-z|$ **ifodani soddalshtiring.**

Yechish.

$z=\sqrt[4]{4}=\sqrt[4]{2^2}=\sqrt{2}.$

$x=z=\sqrt{2}\to 1{,}41421.$

$y=\sqrt[3]{3}\to 1{,}44225.$

$2\sqrt{2}\approx 2{,}82843..$

$$|\underset{\sqrt{3}-\sqrt{2}}{\underbrace{\sqrt{2}-\sqrt[3]{3}}}|+|\underset{\sqrt{3}-\sqrt{2}}{\underbrace{\sqrt{2}-\sqrt[3]{3}}}|+|\underset{2\sqrt{2}-\sqrt{3}}{\underbrace{\sqrt[3]{3}-\sqrt{2}-\sqrt{2}}}|.$$

$y-x+y-z+x+z-y=y.$

$x=z.$

$x-x+y=x-z+y.$ Javob; $x-z+y.$

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ABITURIYNT–2010.

(2010.6.12)

$\sqrt{16\mathbf{x}^2-32}+\sqrt{36\mathbf{x}^2-72}=10\sqrt{2}$

tenglamaning nechita ildizi mavjud?

Yechish.

$\left(\sqrt{16\mathbf{x}^2-32}+\sqrt{36\mathbf{x}^2-72}\right)^2=(10\sqrt{2})^2$

$16\mathbf{x}^2+36\mathbf{x}^2-32-72=200.$

$52\mathbf{x}^2-104-200=0.$

$48\mathbf{x}^2-304=0. \Rightarrow \mathbf{x}=\pm\frac{\sqrt{57}}{3}.$ Javob; 2.

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ABITURIYNT–2010.

(2010.6.13)

Hadlari musbat sonlardan iborat cheksiz kamayuvchi geometrik progressiyaning hadlari yig'indisi 40,5 ga, ilk 3 ta hadi yig'indisi 39 ga teng. Shu progressiyaning to'rtinchi hadini toping.

Yechish.

$b_1+b_2+b_3=39.\ \dfrac{b_1}{1-q}=40{,}5.$

$b_1(1+q+q^2)=39.\ \Rightarrow b_1=\dfrac{39}{1+q+q^2}.$

$$\frac{\dfrac{39}{1+q+q^2}}{1-q}=\frac{81}{2}.\ \Rightarrow\ \frac{39}{(1-q)(1+q+q^2)}=\frac{81}{2}.\ \Rightarrow\ \frac{39}{1-q^3}=\frac{81}{2}.$$

$$1-q^3=\frac{\dfrac{39}{81}}{2}.\ q^3=1-\frac{13\times2}{27}=\frac{27-26}{27}=\frac{1}{27}=\frac{1}{3}.$$

$$q=\frac{1}{3}.$$

$$\frac{b_1}{1-\dfrac{1}{3}}=\frac{81}{2}.\ \Rightarrow\ b_1=\frac{81}{2}\times\frac{3-1}{3}=27.$$

$b_4=b_1q^3=27\times\dfrac{1}{27}=1.$ Javob; 1.

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ABITURIYNT–2010.

(2010.6.14)

Kasirning $\frac{3}{5}$ ga teng. Agar kasirning

15, mahrajiga 5 qo'shilsa, uning qiymati $\frac{9}{10}$ ga teng

bo'lib qoladi. Kasrning maxraji va surati

ayirmasini toping.

Yechish.

$$\frac{3x+15}{5x+5}=\frac{9}{10}. \Rightarrow 10(3x+15)=9(5x+5).$$

$$30x+150=45x+45.$$

$$30x-45x=45-150.$$

$$15x=105.$$

$$x=\frac{105}{15}=7.$$

$5x-3x=5\times7-3\times7=35-21=14.$ Javob; 14.

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ABITURIYNT–2010.

(2010.6.15)

Tuhumfurush 150 **so'mdan** 100 **ta tuhum sotib oldi. Tuhumlardan** 20 **tasi sinib qoldi. Sotuvchi singa tuhumlarni** 175 **so'mdan, butunini** 200 **so'mdan sotdi. Bu tijoratda sotuvchi necha** % **foyda qilgan?**

Yechish.

$$\left(\frac{200\times 80+175\times 20}{100\times 150}-1\right)\times 100\%.$$

$$\left(\frac{16000+3500}{15000}-1\right)\times 100\%=\left(\frac{19500}{15000}-1\right)\times 100\%.$$

$$\frac{19500-15000}{15000}\times 100\%=\frac{4500}{15000}\times 100\%.$$

$$\frac{45}{150}\times 100\%=\frac{3}{10}\times 100\%=30\%.$$ Javob; 30%.

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ABITURIYNT–2010.

(2010.6.16)

$\oint(x)=\frac{x+2}{x-3}$; $\oint(g(x))=4x-5$ bo'lsa,

$g\left(\oint(5,5)\right)=?$

Yechish.

$$\oint(5,5)=\frac{5,5+2}{5,5-3}=3.$$

$$\oint(g(x))=\frac{g(x)+2}{g(x)-3}=4x-5.$$

$$g(x)+2=(g(x)-3)(4x-5).$$

$$g(x)+2=4xg(x)-5g(x)-12x+15.$$

$$g(x)+5g(x)-4x(g(x))=15-2-12x.$$

$$g(x)(6-4x)=13-12x.$$

$$g(x)=\frac{13-12x}{6-4x}. \Rightarrow g(3)=\frac{13-12\times3}{6-4\times3}.$$

$$\frac{13-36}{6-12}=\frac{-23}{-6}=\frac{23}{6}.$$ Javob; $\frac{23}{6}$.

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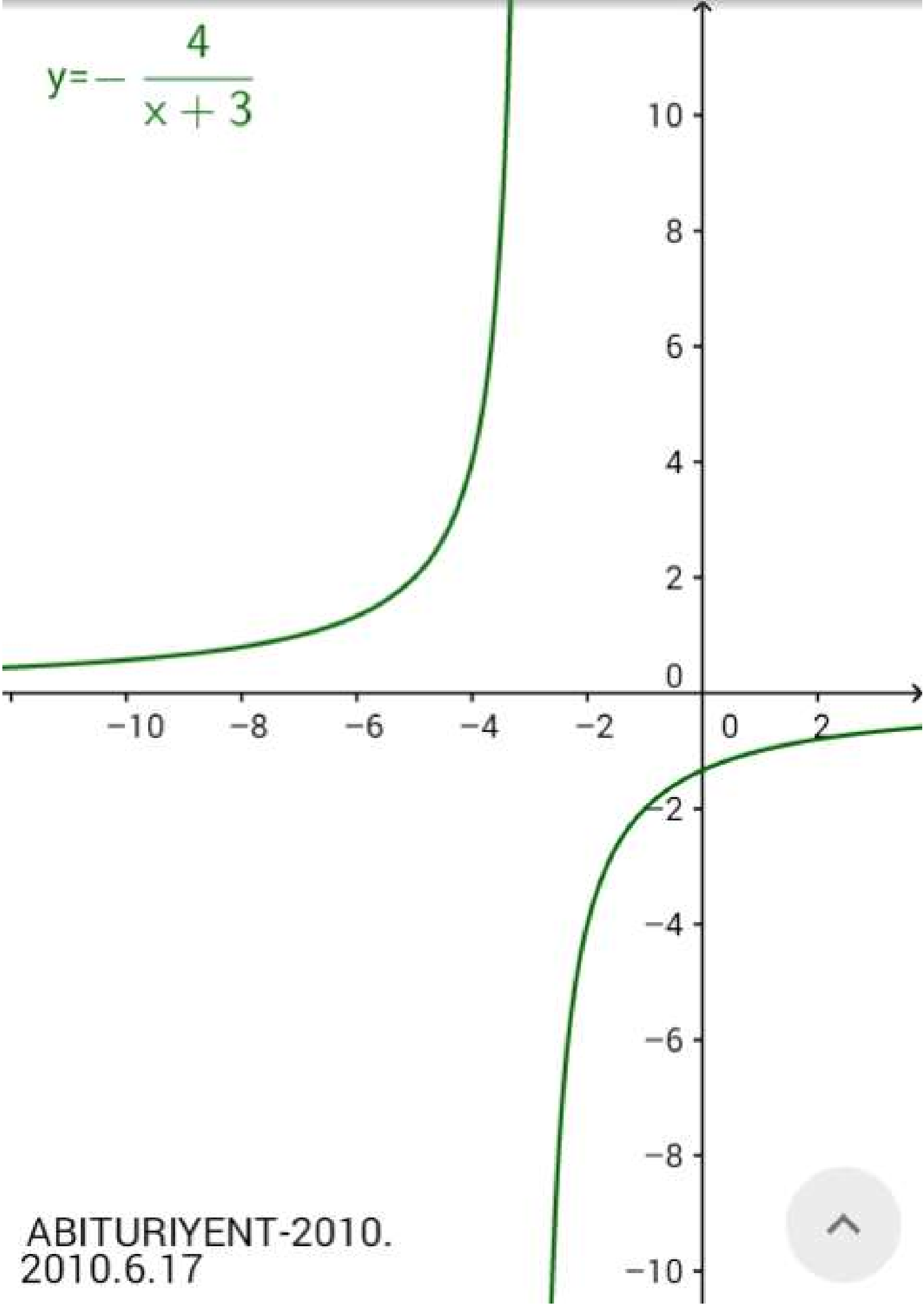
ABITURIYENT–2010

(2010.6.17)

$y=-\frac{4}{x+3}$ funksiyaning grafigi qaysi choraklardan o'tadi.

Javob; II. III va IV.

$$y = -\frac{4}{x+3}$$



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ABITURIYENT–2010

(2010.6.18)

$\log_7 3=\alpha$ bo'lsa, $\log_{27}441$ ning qiymati nechaga teng?

Yechish.

$$\log_{27}441=\frac{\log_7 441}{\log_7 27}=\frac{\log_7 21^2}{\log_7 3^3}=\frac{2\log_7(7\times 3)}{3\log_7 3}.$$

$$\frac{2\left(\log_7 7+\log_7 3\right)}{3\alpha}=\frac{2+2\alpha}{3\alpha}.$$ Javob; $\frac{2+2\alpha}{3\alpha}$.

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ABITURIYENT–2010

(2010.6.19)

Tengsizlikni yeching.

$$\log_{\frac{1}{3}}(x^2-2x+3)-\log_{\frac{1}{3}}6>0.$$

Yechish.

$$\log_{3^{-1}}(x^2-2x+3)-\log_{3^{-1}}6>0$$

$$\log_3 6-\log_3(x^2-2x+3)>0.$$

$$\log_3\frac{6}{x^2-2x+3}>\log_3 1.$$

$$\frac{6}{x^2-2x+3}>1. \Rightarrow -x^2+2x-3+6>0\Big|^{-1}.$$

$$x^2-2x-3<0. \quad x^2+x-3x-3<0.$$

$$x(x+1)-3(x+1)<0.$$

$$(x+1)(x-3)<0.$$

$$x+1<0. \ x<-1.$$

$$x-3<0. \ x<3.$$

$$\begin{cases} x<-1 \\ x>3 \end{cases} \cdot \begin{cases} x>-1 \\ x<3 \end{cases} \cdot$$

$$\begin{cases} x>-1 \\ x<3 \end{cases} \Rightarrow (-1;3) \quad \text{Javob; } (-1;3).$$

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ABITURIYENT–2010

(2010.6.20)

$90^\circ<x<y<180^\circ$ bo'lsa, quydagilardan qaysi biri to'g'ri.

A) $\cos x<\cos y$. B) $\operatorname{tg}x<\operatorname{tg}y$. C) $\sin x<\sin y$. D) $\sin x<\cos y$.

Yechish.

$x=120^\circ$. $y=150^\circ$

A) $\cos x120^\circ<\cos 150^\circ=-\frac{1}{2}<-\frac{\sqrt{3}}{2}\varnothing \Rightarrow \overset{-0,5}{-\frac{1}{2}}>\overset{-0,866025}{-\frac{\sqrt{3}}{2}}$.

B) $\operatorname{tg}120^\circ<\operatorname{tg}150^\circ=\overset{-1,73205}{-\sqrt{3}}<\overset{-0,57735}{-\frac{\sqrt{3}}{3}}$.

C) $\sin 120^\circ<\sin 150^\circ=\frac{\sqrt{3}}{2}<\frac{1}{2}\varnothing \Rightarrow \overset{0,866025}{\frac{\sqrt{3}}{2}}>\overset{0,5}{\frac{1}{2}}$.

D) $\sin 120^\circ<\cos 150^\circ=\frac{\sqrt{3}}{2}<-\frac{\sqrt{3}}{2}\varnothing. \Rightarrow \overset{0,866025}{\frac{\sqrt{3}}{2}}>\overset{-0,866025}{-\frac{\sqrt{3}}{2}}$. Javob; B.

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ABITURIYENT–2010

(2010.6.21)

Hisoblang.

$$4\cos 20^\circ - \frac{\sqrt{3}}{\sin 80^\circ}.$$

Yechish.

$$4\cos 20^\circ - \frac{\sqrt{3}}{\sin(90^\circ - 10^\circ)} = 4\cos 20^\circ - \frac{\sqrt{3}}{\cos 10^\circ}.$$

$$\frac{4\cos 20^\circ \cos 10^\circ - \sqrt{3}}{\cos 10^\circ} = \frac{4 \times \frac{1}{2}(\cos(20^\circ - 10^\circ) + \cos(20^\circ + 10^\circ) - \sqrt{3}}{\cos 10^\circ}.$$

$$\frac{2\cos 10^\circ + 2\cos 30^\circ - \sqrt{3}}{\cos 10^\circ} = \frac{2\cos 10^\circ + 2 \times \frac{\sqrt{3}}{2} - \sqrt{3}}{\cos 10^\circ} = 2.$$ Javob; 2.

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ABITURIYENT–2010

(2010.6.22)

Nechita o'tkir burchak $\sin 6x - \cos 3x = 0$ tenglikni qanoatlantiradi?

Yechish.

$2\sin 3x\cos 3x - \cos 3x = 0.$

$\cos 3x(2\sin 3x - 1) = 0.$

$\cos 3x = 0. \Rightarrow 3x = 90^\circ; 270^\circ \quad x = 30^\circ; 90^\circ.$

$\sin 3x = \frac{1}{2}. \Rightarrow 3x = 30^\circ; 150^\circ; \quad x = 10^\circ; 50^\circ$

$x = \angle 10^\circ; 30^\circ; 50^\circ. \quad x = 90^\circ.$ Javob; 3.

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ABITURIYENT–2010

(2010.6.23)

y=cos(sin5x) funksiyaning hosilasini toping.

Yechish.

$-\sin(\sin 5x)\times\cos 5x\times 5.$

$-5\sin(\sin 5x)\cos 5x.$ Javob; $-5\cos 5x\sin(\sin 5x).$

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ABITURIYENT–2010

(2010.6.24)

$y=\frac{1}{x^2-4}$ funksiyaning boshlang'ichini toping.

Yechish.

$$\frac{1}{4}\times\frac{4}{(x-2)(x+2)}=\frac{x+2-x+2}{(x-2)(x+2)}.$$

$$\frac{1}{4}\times\frac{1}{x-2}-\frac{1}{x+2}=\frac{1}{4}\times\ln(x-2)-\ln(x+2).$$

$$\frac{1}{4}\times\ln\left(\frac{x-2}{x+2}\right)=\frac{\ln\left(\frac{x-2}{x+2}\right)}{4}.$$ Javob; $\frac{\ln\left(\frac{x-2}{x+2}\right)}{4}$.

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ABITURIYENT–2010

(2010.6.25)

Qo'shni burchaklardan biri ikkinchisidan 4 martta katta. Bu burchaklarni ayirmasini toping.

Yechish.

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

$x+4x=180^\circ.$

$5x=180^\circ.$

$x=\frac{180^\circ}{5}=36^\circ.$

$4\times36^\circ=144^\circ.\quad 144^\circ-36^\circ=108^\circ.$ Javob; $108^\circ.$

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ABITURIYENT–2010

(2010.6.26)

Rasmda berilganlardan foydalanib
eng uzun kesmani toping.

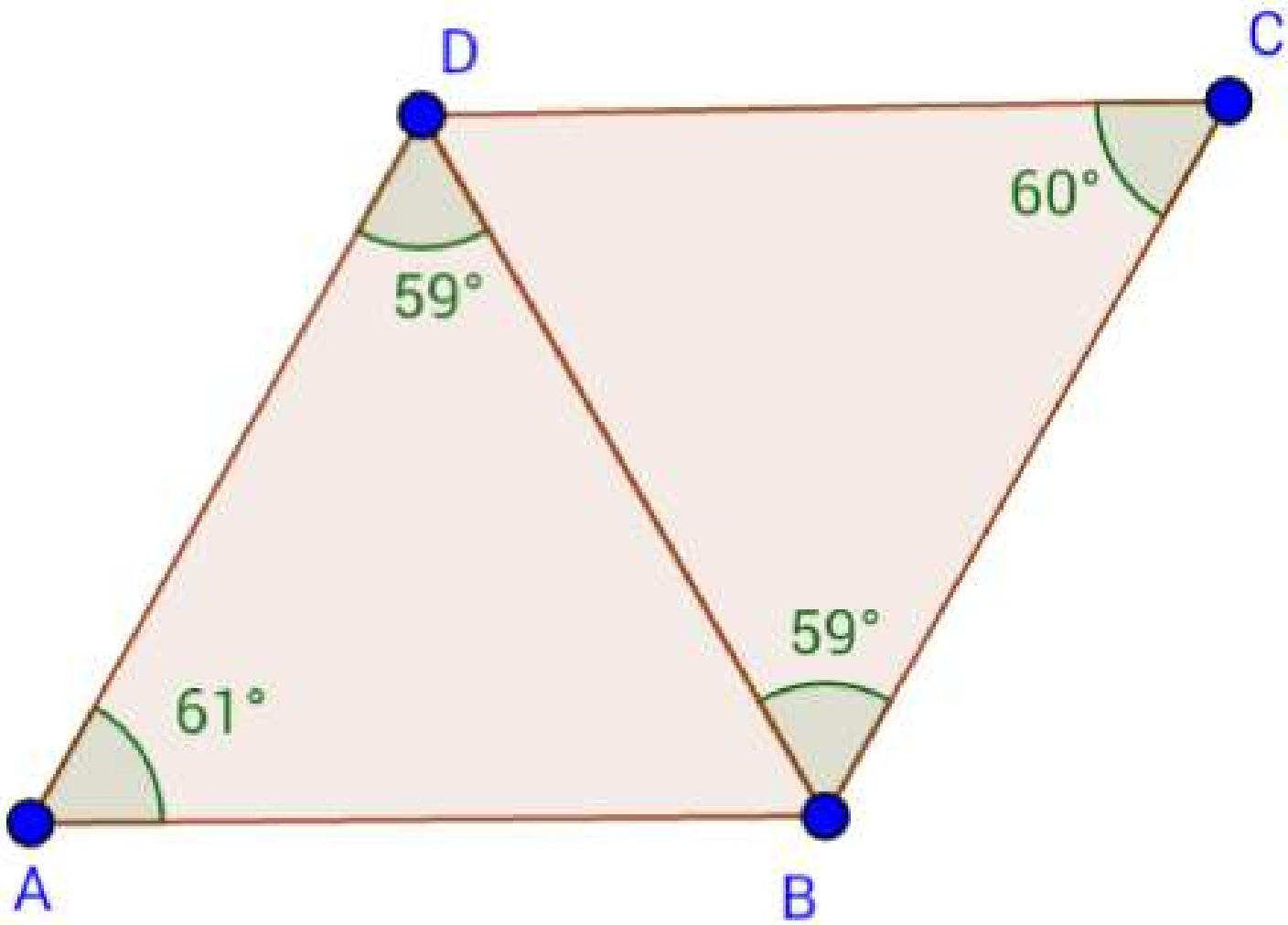
Yechish.

Uchburchakning katta burchagi
qarshisida katta tomon yotadi.

$\triangle ABD = 59^\circ < 60^\circ < 61^\circ. \Rightarrow AB < AD < DB.$

$\triangle BCD = 59^\circ < 60^\circ < 61^\circ \Rightarrow DC < DB < BC.$

$\square ABCD$ eng katta tomoni BC. Javob; BC.



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ABITURIYENT–2010

(2010.6.27)

Teng yonli ABC uchburchakning BC asosi 2 ga, yon tomonlari 8 ga teng. Uchburchakning AB tomoniga CD balandlik tushirilgan. ADC uchburchakning yuzi BDC uchburchakning yuzidan necha martta katta?

Yechish.

$$\begin{cases} CD^2=8^2-x^2 \\ CD^2=2^2-(8-x)^2 \end{cases}$$

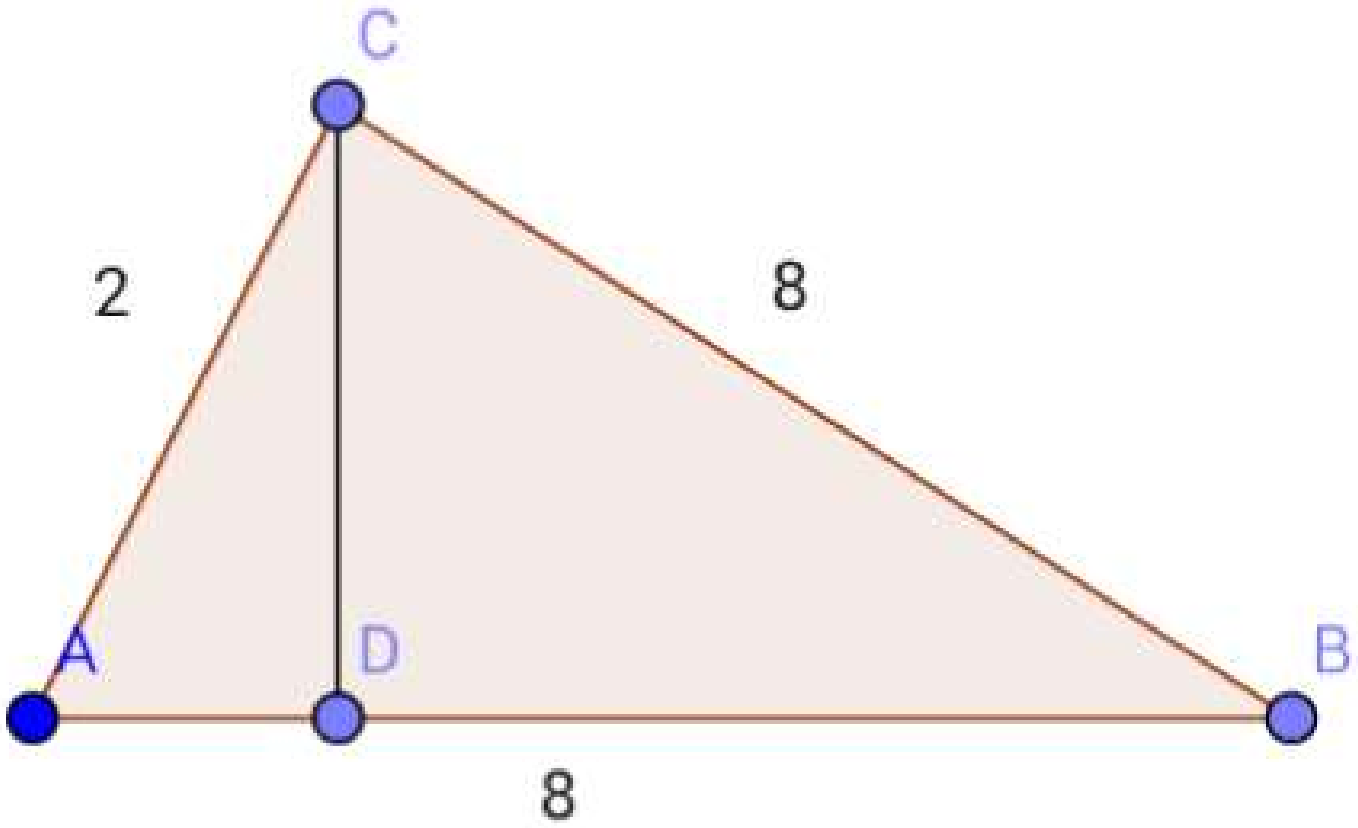
$$64-x^2=4-64+16x-x^2.$$

$$-16x=-64-60\Big|^{-1}. \Rightarrow x=\frac{124}{16}=\frac{31}{4}.$$

$$8-x=8-\frac{31}{4}=\frac{32-31}{4}=\frac{1}{4}.$$

$$S_{\triangle ADC}=\frac{1}{2}AD\times CD.\ S_{\triangle CDB}=\frac{1}{2}BD\times CD.$$

$$\frac{S_{\triangle ABD}}{S_{\triangle CDB}}=\frac{AD}{BD}=\frac{x}{8-x}=\frac{\frac{31}{4}}{\frac{1}{4}}=31.$$ Javob; 31.



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ABITURIYENT–2010

(2010.6.28)

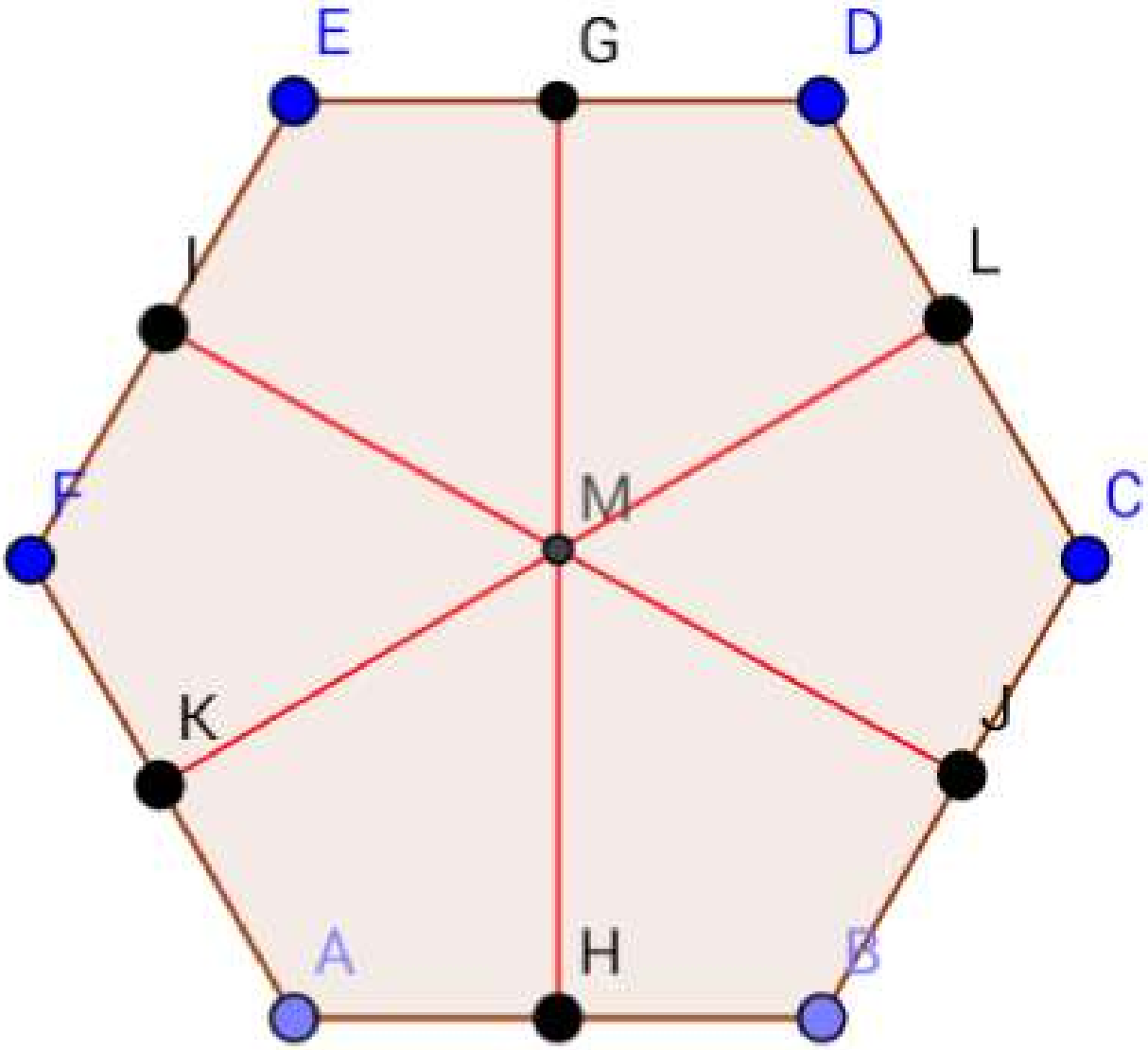
Muntazam oltiburchakning yuzi $24\sqrt{3}$ ga teng. Shu oltiburchakning ichidagi ixtiyoriy nuqtadan tominlarigacha bo'lgan masofalar yig'indisini toping.

Yechish.

$$\frac{a^2 3\sqrt{3}}{2}=24\sqrt{3}.$$

$$a^2=\frac{48\sqrt{3}}{3\sqrt{3}}=16. \Rightarrow 4.$$

$3d=3\times a\sqrt{3}=3\times 4\sqrt{3}=12\sqrt{3}$. Javob; $12\sqrt{3}$.



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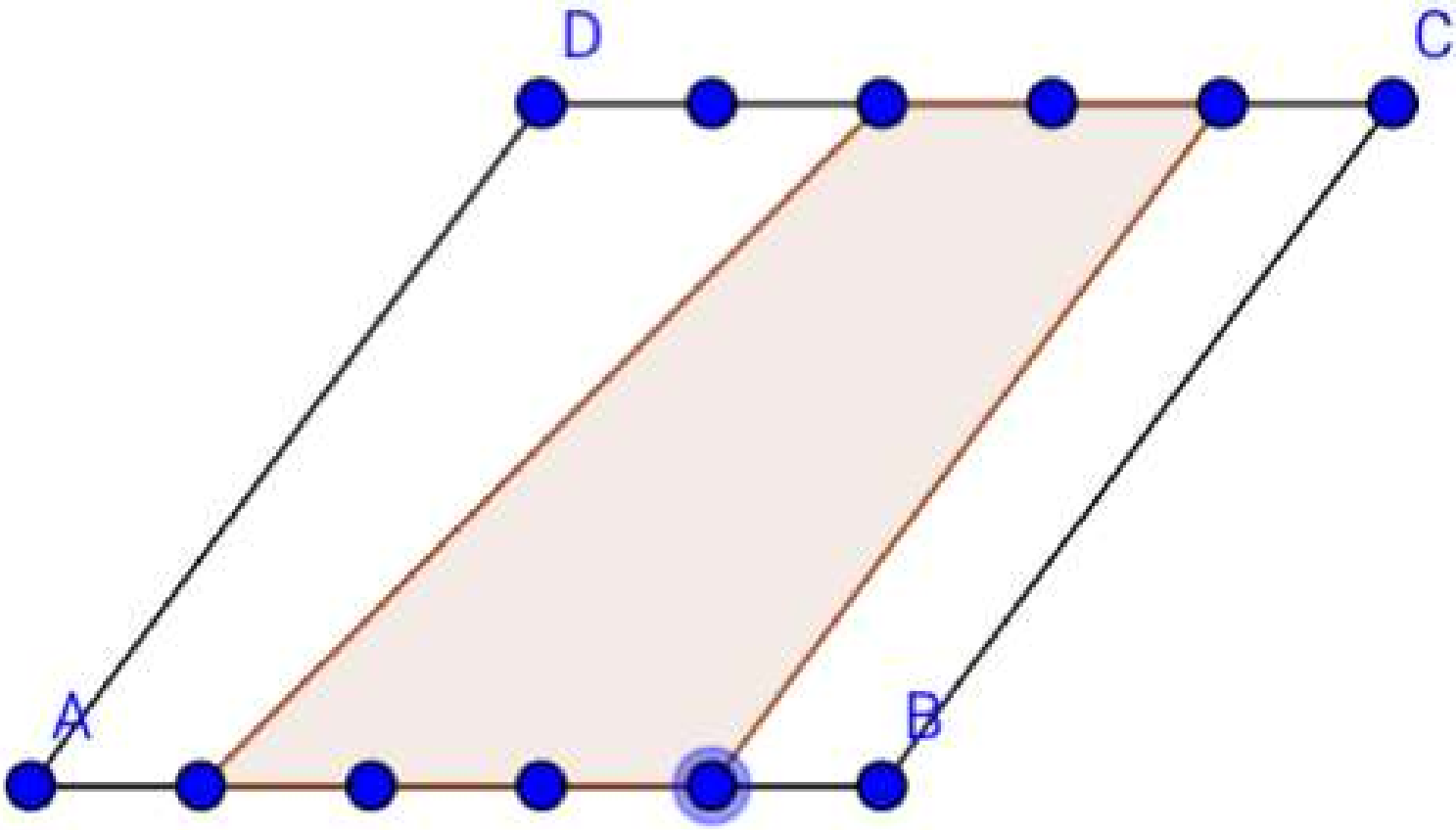
ABITURIYENT–2010

(2010.6.29)

Rasmdagi parallelgramning asoslari teng bo'laklarga bo'lingan. Bo'yalgan soha yuzining parallelgramm yuziga nisbatini toping.

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



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ABITURIYENT–2010

(2010.6.30)

Doira va kvadratning perimetri teng. Kvadrat yuzining doira yuziga nisbatini toping.

Yechish.

$$2\pi R=4\alpha. \Rightarrow \alpha=\frac{\pi R}{2}.$$

$$\frac{\frac{(\pi R)^2}{4}}{\pi R^2}=\frac{\pi}{4}.$$ Javob; $\frac{\pi}{4}$.

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ABITURIYENT–2010

(2010.6.31)

Rombning bir uchi aylana markazida qolgan uchlari aylanada yotadi. Agar aylananing radiusi 12 sm bo'lsa, rombning balandligini toping.

Yechish.

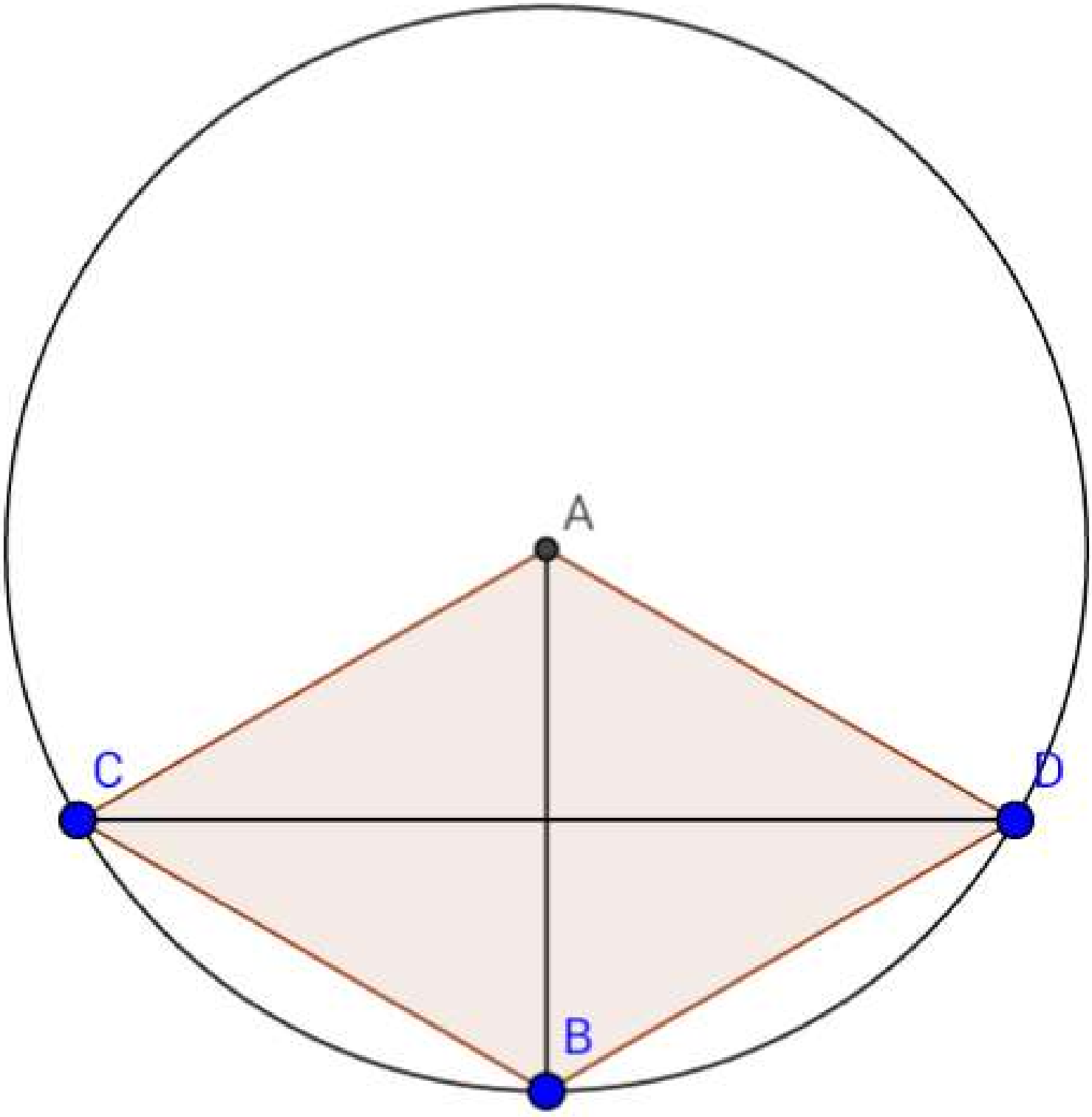
$R=12.$

$R^2=\left(\frac{R}{2}\right)^2+d^2.\ d=\frac{\sqrt{3}}{2}R.$

$S=ah=Rh.\ d_1=R_1.$

$S=\frac{1}{2}d_1\times d_2=\frac{1}{2}R\times\sqrt{3}R.$

$Rh=\frac{1}{2}R\times R\sqrt{3}.\ \Rightarrow h=\frac{12\sqrt{3}}{2}=6\sqrt{3}.$ Javob; $6\sqrt{3}$.



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ABITURIYENT–2010

(2010.6.32)

A(3;3), B(−1;−3) va C(0;2k) nuqtalar bir to'g'ri chiziqda yotsa, k nechaga teng?

Yechish.

$\overset{x_1;y_1}{A(3;3)}$. $\overset{x_2;y_2}{B(-1;-3)}$. $\overset{x_3;y_3}{C(0;2k)}$.

$$\frac{x_1-x_2}{x_2-x_3}=\frac{y_1-y_2}{y_2-y_3}.$$

$$\frac{3+1}{-1+0}=\frac{3+3}{-3-2k}. \Rightarrow -4(-3-2k)=6.$$

$$12+8k=6.$$

$$k=\frac{-12+6}{8}=-0,75.$$ Javob; $-0,75$.

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ABITURIYENT–2010

(2010.6.33).

$|\vec{\alpha}|=4$ va $|\vec{b}|=6$. hamda $|\vec{\alpha}|$ va $|\vec{b}|$ vektorlar orasidagi burchak 60° bo'lsa,

$\vec{c}=2\vec{\alpha}+\vec{b}$ vektorning uzunligini toping.

Yechish.

$$ab=4\times6\times\cos60^\circ=24\times\frac{1}{2}=12.$$

$$c=\sqrt{(2a+b)^2}=\sqrt{4a^2+4ab+b^2}.$$

$$\sqrt{4\times16+4\times12+36}=\sqrt{64+48+34}.$$

$\sqrt{148}=2\sqrt{37}$. Javob; $2\sqrt{37}$.

ABITURIYENT–2010

(2010.6.34).

Quydagi mulohazalardan qaysi biri noto'g'ri?

A) Ikki tekislik kesishishidan to'g'ri chiziq hosil bo'ladi.

B) Ixtiyoriy uchta nuqtadan faqat bitta tekislik o'tkazish mumkin.

C) Og'maning uzunligi uning proeksiyasi va og'madan tekkislikkcha bo'lgan masofalar yig'indisidan kichik bo'ladi.

D) Nuqtadan chiziqqacha bo'lgan eng qisqa masofa chiziqqa shu nuqtadan o'tkazilgan perependikular kesmaning uzunligiga teng.

Javob; B.

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ABITURIYENT–2010

(2010.6.35).

Hajmi 176 ga va balandligi 4 ga teng bo'lgan muntazam to'rtburchakli piramidaning apofemasini toping.

Yechish;

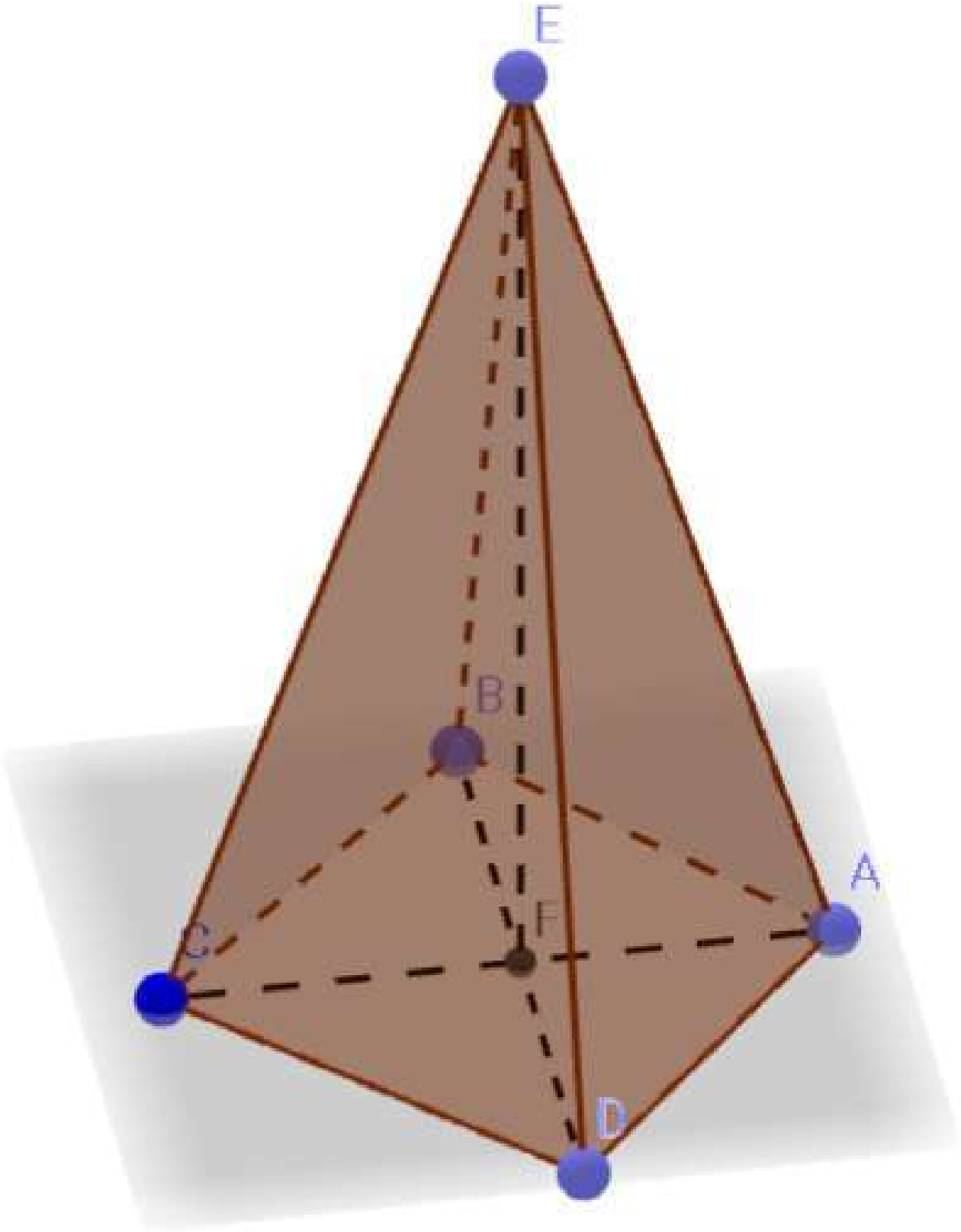
$$V=\frac{1}{3}S_{asos}\times h.$$

$$176=\frac{1}{3}\times a^2\times 4.$$

$$a^2=44\times 3 \Rightarrow 4\times 33. \Rightarrow 2\sqrt{33}.$$

$$f^2=\frac{a^2}{4}+4^2. \Rightarrow f^2=\frac{4\times 33}{4}+16.$$

$$f=\sqrt{33+16}=\sqrt{49}=7.$$ Javob; 7.



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(2010.6.36).

Tomonlari α va b ga teng bo'lgan to'g'ri to'rtburchak b tomoni atrofida aylantirilganda hosil bo'lgan jisimning hajmi radiusi 3 ga teng bo'lgan sharning hajmiga teng. Quydagi α va b orasidagi munosabatlardan qaysi biri to'g'ri?

Yechish;

shar hajmi $V=\frac{4}{3}\pi R^3$.

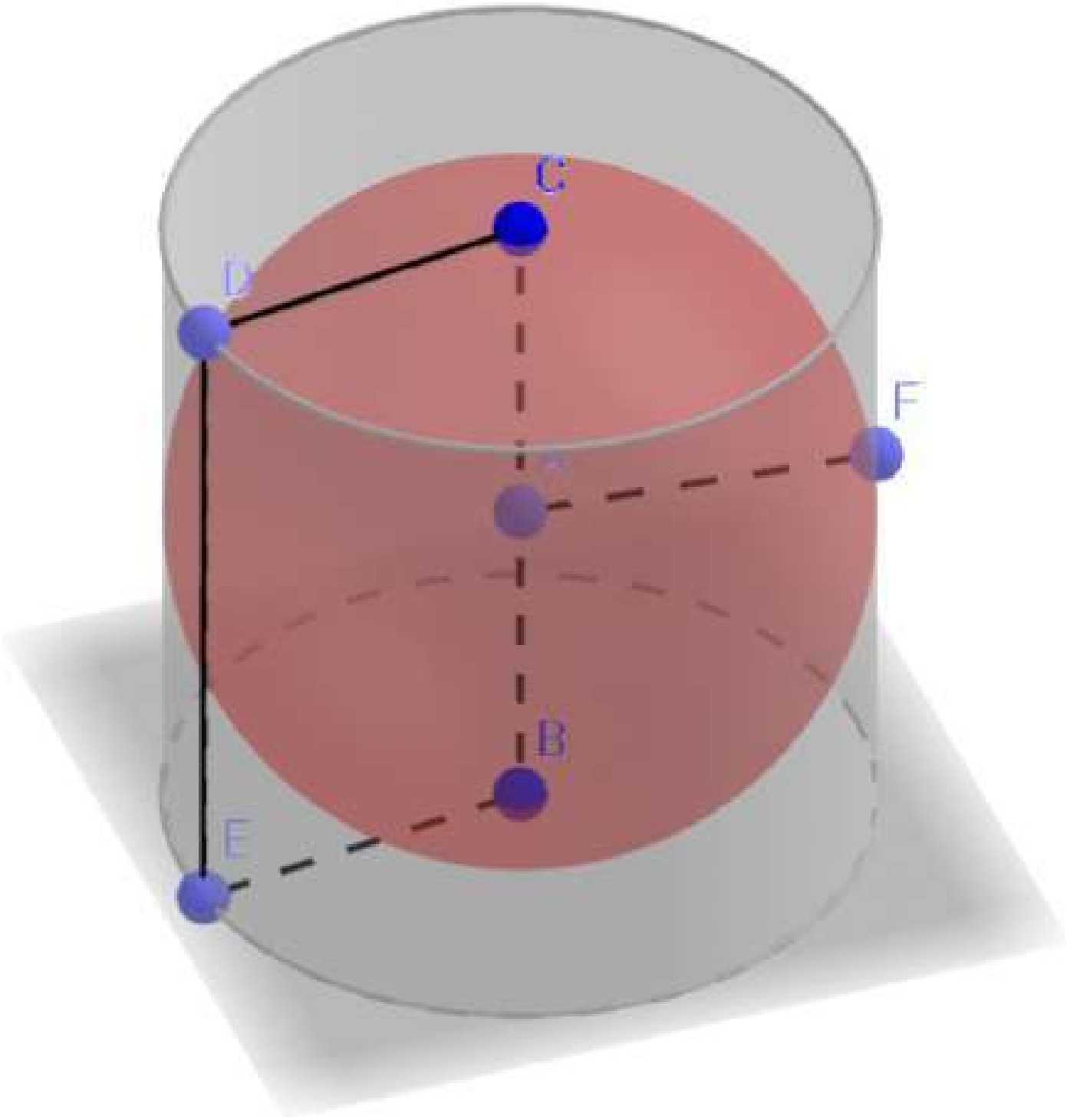
Slinder $V=\pi R^2 h$.

$b=h$. $R=3$.

$2R=2\times 3=6$.

$\frac{4}{3}\pi R^3=\pi a^2 b. \Rightarrow \frac{4}{3}\times 27=a^2 b.$

$a^2b=36$. Javob; $a^2b=36$.



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