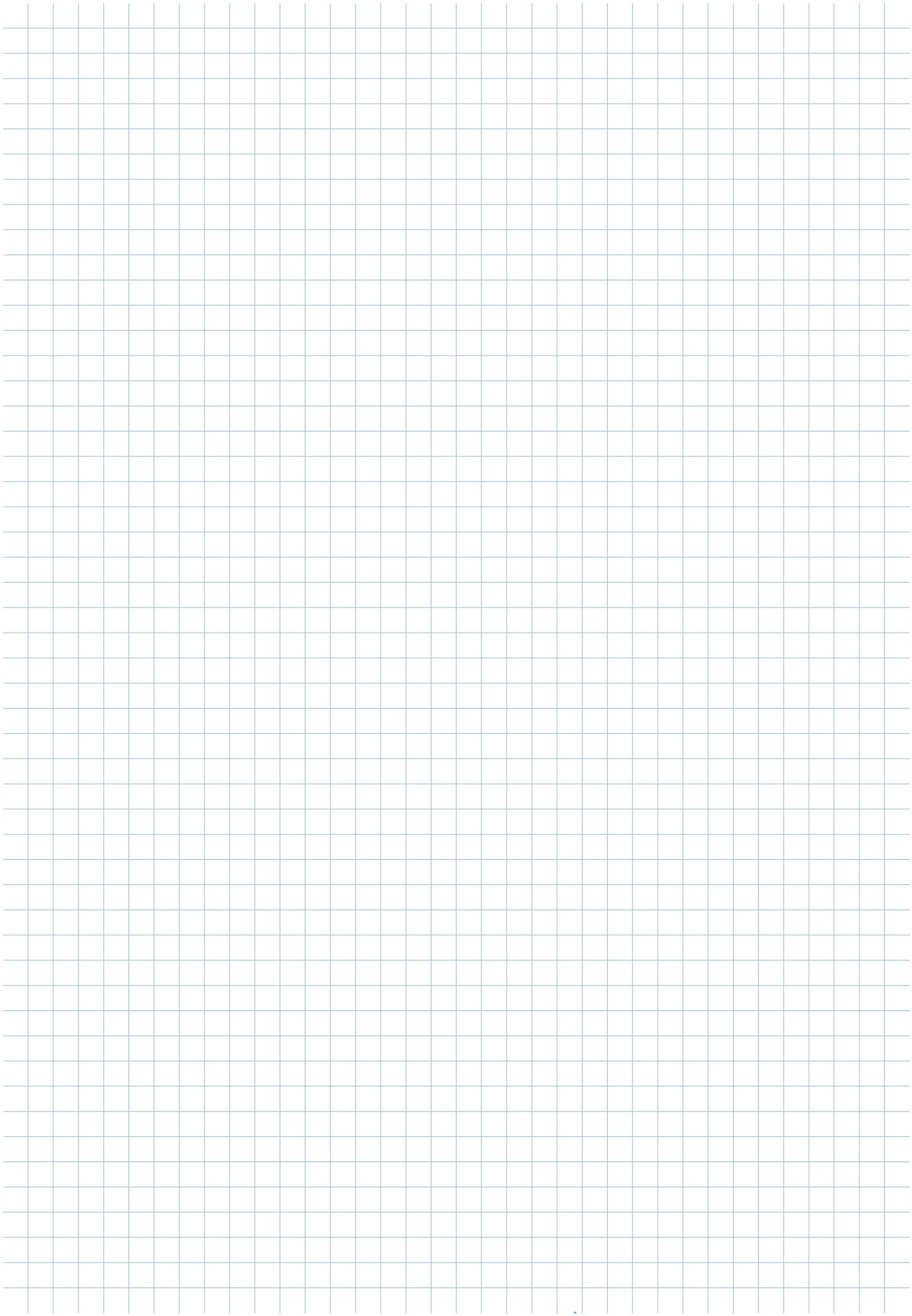
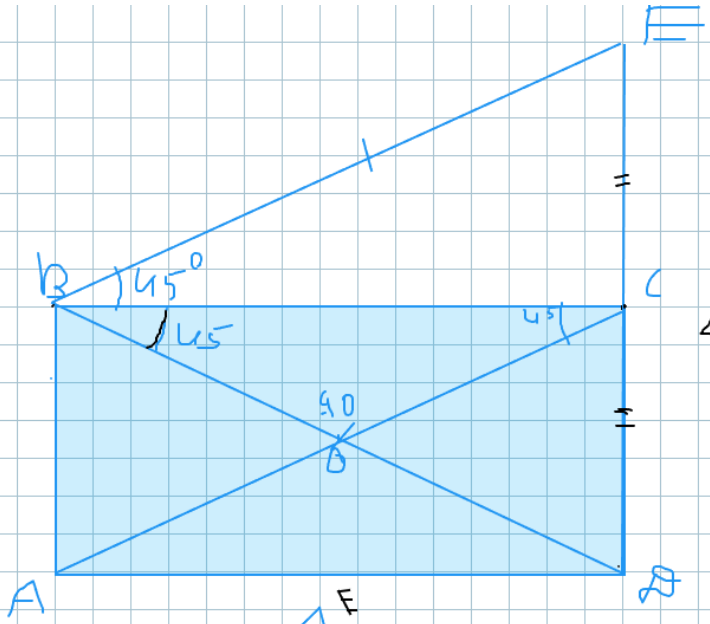


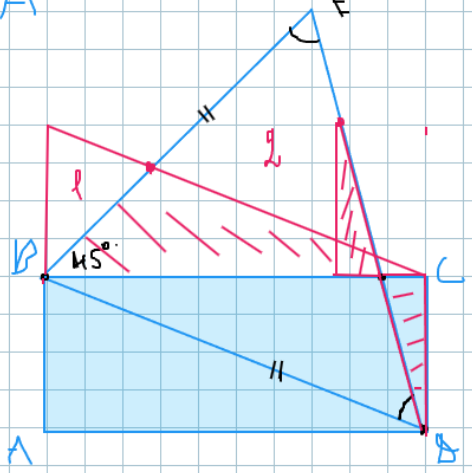


$\angle BOC = 90°$.

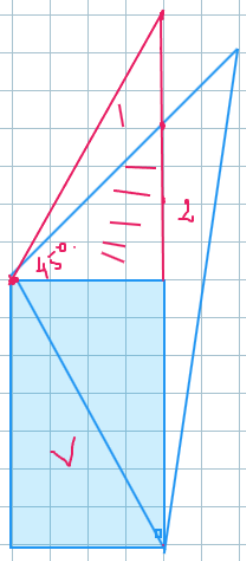
$S_{\triangle BEF} = \frac{1}{2} BC \cdot DE =$

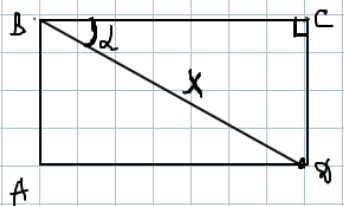
$= \frac{1}{2} BC \cdot AD = BC \cdot CD =$

$= S_{ABCD}$.



$S_{ABCD} = S_{BDE}$





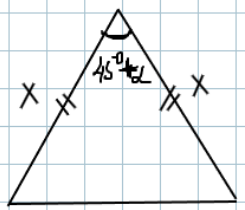
$\frac{CD}{BD} = \sin\alpha$

$CD = x \cdot \sin\alpha$.

$\frac{BC}{BD} = \cos\alpha$

$BC = x\cos\alpha$

$S = CD \cdot BC = x^2 \cdot \cos\alpha \cdot \sin\alpha$.



$S_4 = \frac{1}{2} x^2 \cdot \sin(45° + \alpha)$.

$\sin\left(\frac{\pi}{2} + \right.$

- d

$\frac{1}{2}\cdot\sin\left(\frac{\pi}{4}+\alpha\right)=\cos\alpha\sin\alpha$

$\frac{1}{2}\left(\sin\frac{\pi}{4}\cos\alpha+\sin\alpha\cos\frac{\pi}{4}\right)=\cos\alpha\sin\alpha$

$\frac{\sqrt{2}}{4}\cos\alpha+\frac{\sqrt{2}}{4}\sin\alpha=\cos\alpha\sin\alpha$

$\cos\alpha+\sin\alpha=t$

$(\cos\alpha+\sin\alpha)^2=t^2$

$\cos^2\alpha+2\sin\alpha\cos\alpha+\sin^2\alpha=t^2$

$1+2\sin\alpha\cos\alpha=t^2$

$\sin\alpha\cos\alpha=\frac{t^2-1}{2}$

$\frac{\sqrt{2}}{4}\left(\cos\alpha+\sin\alpha\right)=\cos\alpha\sin\alpha.$

$\frac{\sqrt{2}}{4}t=\frac{t^2-1}{2}.$

$t^2-t-\sqrt{2}t=0$

$2t^2-\sqrt{2}t-2=0$

$D=2+16=18$

$t_{1,2}=\frac{\sqrt{2}\pm3\sqrt{2}}{4}=\begin{bmatrix}\sqrt{2}\\-\frac{\sqrt{2}}{2}\end{bmatrix}$

$\cos\alpha+\sin\alpha=\sqrt{2}\ \ |:\sqrt{2}$ и $\sin\alpha+\cos\alpha=-\frac{\sqrt{2}}{2}$.

$\frac{1}{\sqrt{2}}\cos\alpha+\frac{1}{\sqrt{2}}\sin\alpha=1.$

$\cos\frac{\pi}{4}\quad\sin\frac{\pi}{4}$

$\frac{1}{\sqrt{2}}\sin\alpha+\frac{1}{\sqrt{2}}\cos\alpha=-\frac{1}{2}.$

$\cos\left(\alpha-\frac{\pi}{4}\right)=1.$

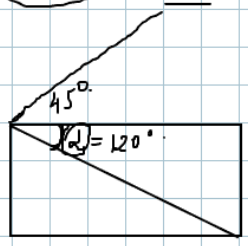
$\cos\left(\alpha-\frac{\pi}{4}\right)=-\frac{1}{2}$

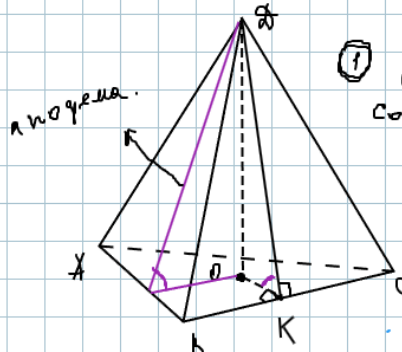
$\alpha-\frac{\pi}{4}=2\pi k$

$\alpha=\frac{\pi}{4}=90^\circ$

$\alpha-\frac{\pi}{4}=\frac{2\pi}{3}$

$\alpha=120^\circ+45^\circ=165^\circ.$





① $DK\perp BC$. $\Rightarrow DK\perp BC$.

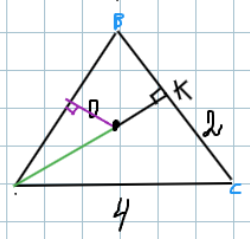
Соед. D и K

$\angle DKO$ - линейный угол двугр. угла.

$\angle DKO=30^\circ$.

② $AB=BC=AC=4$.

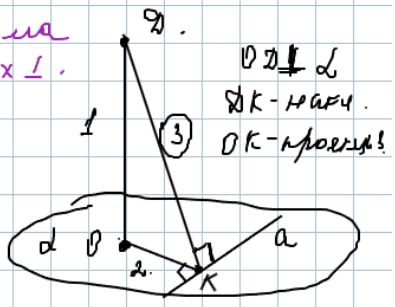
Найти $S_{бок.\ поверхн.}$



$AK=\frac{4\sqrt{3}}{2}=2\sqrt{3}$

$\frac{AO}{OK}=\frac{2}{1}\Rightarrow OK=\frac{1}{3}AK=$

Теорема о 3 х 1.

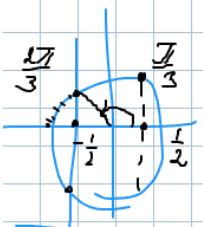


$DO\perp\alpha$

DK - наклон.

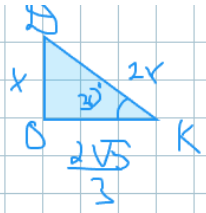
OK - проекция.

$OK\perp a\Rightarrow DK\perp a.$



$\frac{\pi}{4} = \frac{2\pi}{3}$

$\alpha = 45^\circ \cdot 120^\circ < \delta$



$\frac{1}{3}$ $\frac{2\sqrt{3}}{3}$

нат. тип.

$4x^2 = x^2 + \frac{4}{3}$

$3x^2 = \frac{4}{3}$

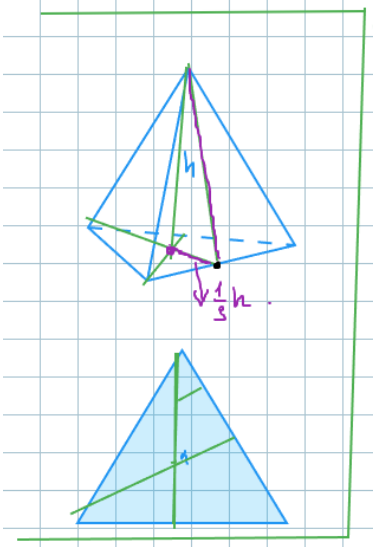
$x^2 = \left(\frac{2}{3}\right)^2$

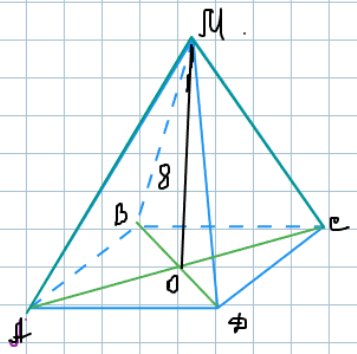
$x = \frac{2}{3}$

$OK = 2x = \frac{4}{3}$ $S_{OKD} = \frac{1}{2} \cdot \frac{4}{3} \cdot 4 = \frac{8}{3}$

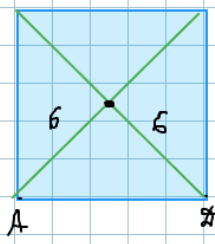
$S = 3 S_{OKD} = \frac{8}{3} \cdot 3 = 8$

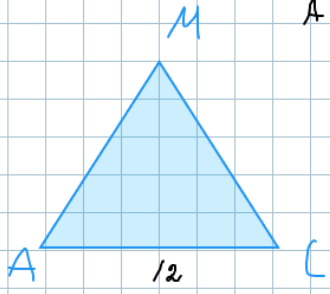
Ответ: 8





$S_{AMC} = 48$ $MO = 8$





$S = \frac{1}{2} AC \cdot MO$

$AC = \frac{2S}{MO} = \frac{2 \cdot 48}{8}$

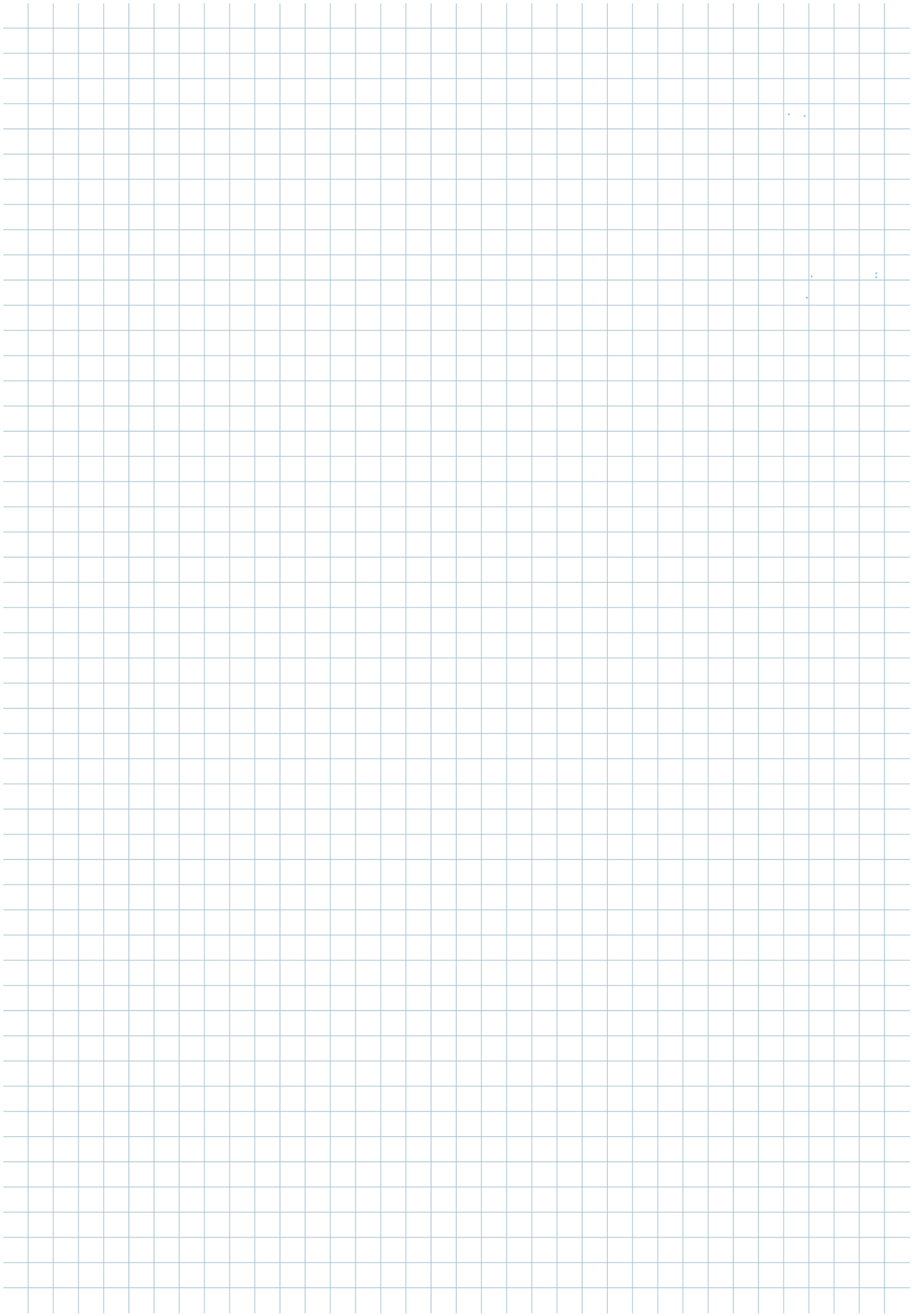
$a = \frac{AC}{\sqrt{2}} = 6\sqrt{2}$

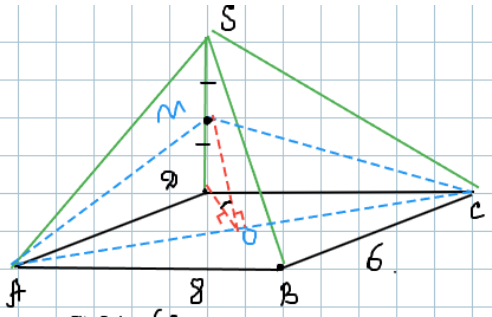
$V = \frac{1}{3} a h = \frac{1}{3} \cdot 8 \cdot 6\sqrt{2} = 16\sqrt{2}$

б

$\frac{18}{}=12$

$\sqrt{2}$

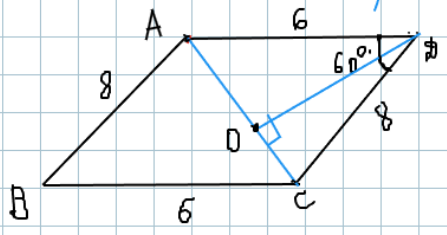




$AB = 8$
$BC = 6$
$\angle ADC = 60°$

$DO \perp AC$.
Соед. M и O.

$\sin(\angle DOM) = \frac{\sqrt{39}}{9}$



$AC^2 = BA^2 + BC^2 - 2 \cdot BA \cdot BC \cdot \cos 60°$

$AC^2 = 8^2 + 6^2 - 2 \cdot 6 \cdot 8 \cdot \frac{1}{2} = 64$

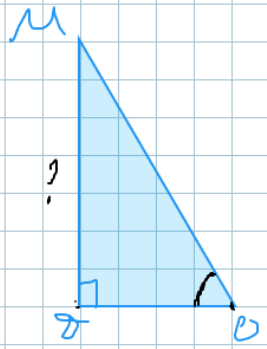
$AC^2 = 100 - 48 = 52 = 4 \cdot 13$

$AC = 2\sqrt{13}$

$S = \frac{1}{2} \cdot 6 \cdot 8 \cdot \sin 60 = 3 \cdot 8 \cdot \frac{\sqrt{3}}{2} = 12\sqrt{3}$

$S = \frac{1}{2} h \cdot AC$

$DO = h = \frac{2S}{AC} = \frac{2 \cdot 12\sqrt{3}}{2\sqrt{13}} = \frac{12\sqrt{3}}{\sqrt{13}} = \frac{12}{13}\sqrt{39}$



$\sin(MDO) = \frac{\sqrt{39}}{9}$

$\cos^2(MDO) = 1 - \frac{39}{81}$

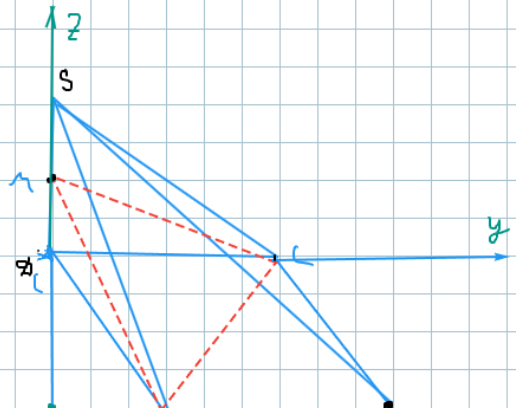
$\cos(MDO) = \frac{\sqrt{42}}{9}$

$\frac{MD}{DO} = \frac{\sin}{\cos} = \operatorname{tg}(MDO) = \frac{\sqrt{39}}{9}$

$MD = DO \cdot \operatorname{tg}(MDO) = \frac{12}{13} \cdot V$

$MD = \frac{36\sqrt{42}}{42} = \frac{6\sqrt{42}}{7}$

$= \frac{12 \cdot 3\sqrt{39}}{13 \cdot \sqrt{42}} =$



$\cup 80$

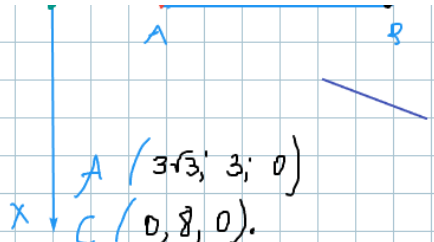
$136-18$

$= \frac{42}{81}$

$\frac{\sqrt{42}}{9} = \sqrt{\frac{39}{42}}$

$\sqrt{39} \cdot \frac{\sqrt{39}}{\sqrt{42}} =$

$\frac{36}{\sqrt{42}}$



$A(3\sqrt{3};\ 3;\ 0)$

$C(0,\ 8,\ 0)$.

$M\left(0;\ 0;\ \frac{6\sqrt{12}}{4}\right)$

$B(3\sqrt{3};\ 11;\ 0)$.