نام و نام خانوادگی ....فرید تبارزی.... پاسخنامه تشریحی تکلیف شماره .... کلاس ......

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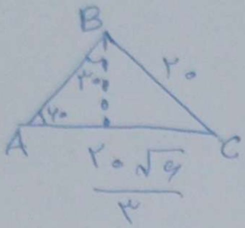

$B+C=120$

$\frac{BC}{\sin A}=\frac{AC}{\sin B} \rightarrow \frac{20\times 2}{\sqrt{3}}=\frac{20\sqrt{6}}{3\times \sin B} \Rightarrow \sin A=\frac{\sqrt{2}}{2}$

$B=45^\circ$ ، $C=75^\circ$

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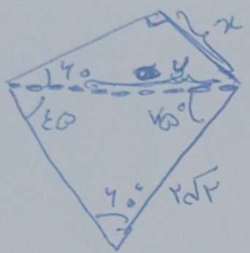

$180-(60+75)=180-135=45$

$\frac{\sin 90}{2\sqrt{3}}=\frac{\sin 60}{x}$

$\frac{2\sqrt{2}}{\sin 45}=\frac{y}{\sin 60^\circ} \Rightarrow \frac{2\sqrt{2}}{\frac{\sqrt{2}}{2}}=\frac{y}{\frac{\sqrt{3}}{2}}$

$\frac{1}{2\sqrt{3}}=\frac{\frac{\sqrt{3}}{2}}{x} \rightarrow 3$

$y\frac{\sqrt{2}}{2}=2\sqrt{2}\times\frac{\sqrt{3}}{2} \Rightarrow y\frac{\sqrt{2}}{2}=\sqrt{2}\times\sqrt{3} \Rightarrow y=2\sqrt{3}$

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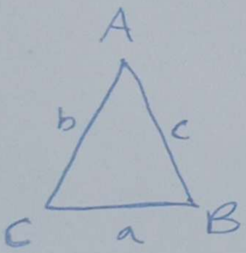

$\frac{b^2\sin C-2\sin C}{\sin B}=c \Rightarrow \frac{b\times\frac{c\sin b}{b}2\sin C}{\sin B} \Rightarrow c\sin B=bc-\frac{2c}{b}$

$\frac{\sin B}{b}=\frac{\sin C}{c} \Rightarrow c\sin B=b\sin C \Rightarrow \frac{c}{b}\sin b=\sin C$

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$bc-2\frac{c}{b}=c \Rightarrow c(b-\frac{2}{b})=c \Rightarrow b-\frac{2}{b}=1 \Rightarrow b=2$

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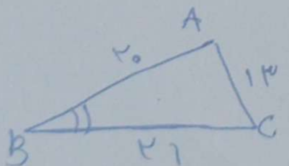

$(13)^2=(20)^2+(21)^2-2(20)(21)\cos B$

$169=400+441-840\cos B \Rightarrow \frac{672}{840}=\cos B \approx \frac{4}{5}$ ، $\frac{8}{10}$

$\sin B=\sqrt{1-\frac{64}{100}}=\sqrt{\frac{100-64}{100}}=\sqrt{\frac{36}{100}}=0.6$

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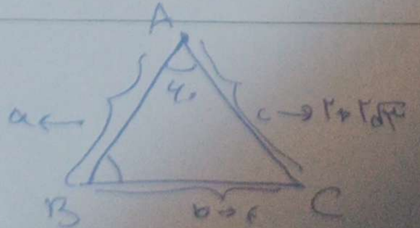
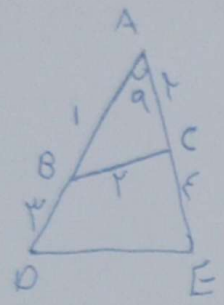


$\frac{2+2\sqrt{3}}{\sin B}=\frac{6}{\frac{\sqrt{3}}{2}} \Rightarrow 12\sin B=\frac{2\sqrt{3}+6}{2}$

$\frac{12\times(\sqrt{3}+3)}{2}$



$۲ = \sqrt{(۲)^۲+(۱)^۲-۲\times۲\times۱\times\cos\alpha} \Rightarrow ۲ = \sqrt{۵-۴\cos\alpha}$

$۵-۴\cos\alpha = ۴ \Rightarrow -۴\cos\alpha = -۱ \Rightarrow \cos\alpha = \frac{۱}{۴}$ ۶

$DE = \sqrt{(۴)^۲+(۴)^۲-۲(۴)(۴)(\frac{۱}{۴})} = \sqrt{۳۲-۸} = \sqrt{۱۸}$

$۳\sqrt{۲}$

$BC = \sqrt{(۵)^۲+(۱)^۲-۲(۵)(۸)\times\frac{۱}{۲}}$

$BC = \sqrt{۲۵+۶۴-۴۰} = \sqrt{۴۹}$

۷

$S = \frac{۱}{۲}\times AC\times BA\times\sin۱۲۰$

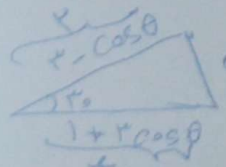
$S = \frac{۱}{۲}\times۵\times۸\times\frac{\sqrt{۳}}{۲} = ۱۰\sqrt{۳}$ ۷

$\frac{(b+c)^۲-a^۲}{bc(\cos A+۱)} = \frac{b^۲+c^۲+۲bc-a^۲}{bc\left(\frac{a^۲+b^۲-c^۲-۲bc}{-۲bc}\right)} = \frac{۲(a^۲-b^۲-c^۲-۲bc)}{a^۲-b^۲-c^۲-۲bc} = ۲$

۸

$\frac{a^۳+b^۳-c^۳}{a+b-c} = a^۲ \Rightarrow a^۳+a^۲b-a^۲c = a^۳+b^۳-c^۳$

$a^۲b = b^۳ \quad a^۲c = c^۳ \Rightarrow a^۲ = b \quad a^۲ = c$ ۹



$\frac{۱}{۲}\times(۲-\cos\theta)(۱+۲\cos\theta)\times\frac{۱}{۲} = ۲$

$۲+۴\cos\theta-\cos\theta-۲\cos^۲\theta$

$\frac{-۲\cos^۲\theta+۸\cos\theta+۲}{} = ۲ \rightarrow -۲\cos^۲\theta+۸\cos\theta+۲ = ۸ \Rightarrow -۲\cos^۲\theta+۸\cos\theta-۶ = ۰$

$\cos\theta = ۱$ ✓

$\cos\theta = ۳$ ✗

$\tan۲۰ = \frac{۱}{a\sqrt{۳}} \Rightarrow \frac{a}{۴} = \frac{۱}{\sqrt{۳}} \Rightarrow a\sqrt{۳} = ۴ \Rightarrow a = \frac{۴}{\sqrt{۳}}$

$(a)^۲ = \frac{۱۶}{۳}$