آدرینا صمیمی — گروه دوازدهم دفتر A — شماره تقلب ۱۴

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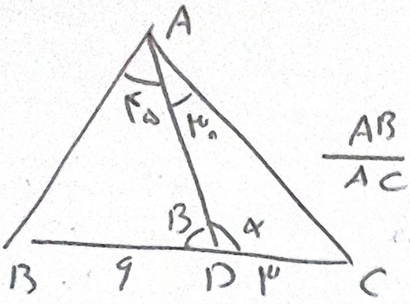

$\frac{AB}{AC} = ? \longrightarrow \dfrac{\frac{AB}{\sin B}}{\frac{AB}{\sin \alpha}} = \frac{AB}{AC} = \dfrac{\frac{12}{\sqrt{2}}}{6} = \frac{12^{2}}{6\sqrt{2}} = \frac{2\sqrt{2}}{2} = \boxed{\sqrt{2}}$

$\frac{AB}{\sin B} = \dfrac{BD^{6}}{\frac{\sin 45}{\frac{\sqrt{2}}{2}}} \longrightarrow \frac{AB}{\sin B} = \frac{12}{\sqrt{2}}$ و $\frac{AC}{\sin \alpha} = \dfrac{DC^{3}}{\frac{\sin 30}{\frac{1}{2}}} = 6 \longrightarrow \sin\alpha = \sin B$

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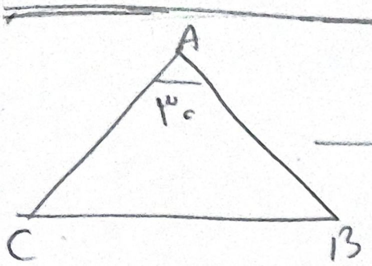

$\longrightarrow S_{A\hat{B}C} = \frac{1}{2} \times AC \times AB \times \sin 30 = \frac{1}{2} \times \log_4 16 \times \log_2 27 \times \frac{1}{2} =$

$\frac{1}{4} \times \frac{\log 16^{4}}{\log 4} \times \frac{\log 27^{3}}{\log 4} \times \frac{1}{2} = \boxed{3}$

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$\dfrac{2x^4 - x^2 - \sin^2\alpha)(2\sin^2\alpha - 1)}{\cos 2\alpha}$ | $x - \cos\alpha$

$\cos\alpha$

$\longrightarrow x = \cos\alpha \longrightarrow 2\cos^4\alpha - \cos^2\alpha - 2\sin^4\alpha + \sin^2\alpha = 1$

$2(\cos^2 - \sin^2)(\cos^2 + \sin^2) - \cos^2\alpha + \sin^2\alpha \longrightarrow \cos^2\alpha - \sin^2\alpha = 1$

$\boxed{\sin 2\alpha = 0} \longleftarrow \sin^2 2\alpha = 1 - \cos^2 2\alpha = 0 \longleftarrow \cos 2\alpha = 1$