

داریم فقط A

تایید نامه ۱۱

هانی و صیال

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$$\angle \text{نمایند} = \frac{\pi}{2} - \alpha \Rightarrow \cos\left(\frac{\pi}{2} - \alpha\right) = \boxed{\sin \alpha} \Rightarrow \frac{OT}{OB} = \frac{1}{OB} = \sin \alpha$$

$$\Rightarrow OB = \frac{1}{\sin \alpha} \Rightarrow OB - OA = OB - 1 = \frac{1}{\sin \alpha} - 1 = \boxed{\frac{1 - \sin \alpha}{\sin \alpha}}$$

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$$\triangle ABD \Rightarrow \frac{\frac{\sqrt{r}}{\frac{r}{4}}}{\frac{r}{4}} = \frac{\sin \hat{D}}{AB} = \frac{\sin \hat{B}}{AD} \Rightarrow \frac{r \sin \hat{D}}{\sqrt{r}} =$$

$$\triangle ADC \Rightarrow \frac{\frac{1}{\frac{r}{4}}}{\frac{r}{4}} = \frac{\sin \hat{C}}{AD} = \frac{\sin \hat{A}}{AC} \Rightarrow \frac{r \sin \hat{A}}{\sqrt{r}} =$$

$$\frac{r \sin \hat{D}}{\sqrt{r} \sin \hat{A}} \xrightarrow{\sin \hat{A} = \sin \hat{D}} \frac{r}{\sqrt{r}} = \boxed{\sqrt{r}}$$

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$$A = \begin{vmatrix} \frac{1}{r} \\ \frac{\sqrt{r}}{r} \end{vmatrix} \quad B = \begin{vmatrix} -\frac{\sqrt{r}}{r} \\ \frac{1}{r} \end{vmatrix}$$

$$AB = \sqrt{\left(\frac{1}{r} + \frac{\sqrt{r}}{r}\right)^2 + \left(\frac{\sqrt{r}}{r} - \frac{1}{r}\right)^2} = \sqrt{r}$$

$$\Downarrow$$

$$BC = \sqrt{r}, \quad CA = \sqrt{r + \sqrt{r}}$$

$$\Rightarrow \text{الف} \Rightarrow S_{ABC} = \frac{1}{2} \times \sqrt{r} \times \sqrt{r} \times 1 = \boxed{\frac{\sqrt{r}}{2}}$$

$$\text{پس} \Rightarrow AB + BC + CA = \boxed{\sqrt{r} + \sqrt{r} + \sqrt{r + \sqrt{r}}}$$