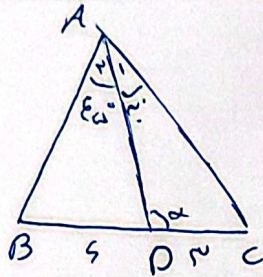


$$\begin{cases} OZ = 1 \\ OT = \tan^r \alpha \Rightarrow \frac{1}{\sin^r \alpha} \cos^r \alpha \end{cases} \xrightarrow{\text{قانون فیثاغورس}} OB^r = OZ^r + BT^r \Rightarrow$$

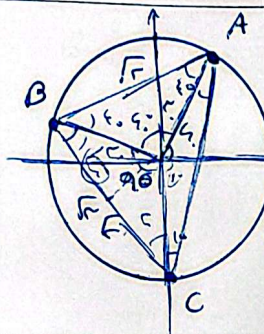
$$OB^r = 1 + \cos^r \alpha = \frac{1}{\sin^r \alpha} \Rightarrow OB = \frac{1}{\sin \alpha} \xrightarrow{\text{①}} OB = OA + AB \Rightarrow$$

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



$$\begin{aligned} \frac{DC}{\sin \hat{A}} &= \frac{AC}{\sin \alpha} \\ \frac{AB}{\sin \hat{A}} &= \frac{AB}{\sin(180 - 2\alpha)} \end{aligned} \Rightarrow \frac{\frac{AC}{\sin \alpha}}{\frac{AB}{\sin(180 - 2\alpha)}} = \frac{1}{\sin \alpha} \Rightarrow \frac{AC}{AB} = \frac{\sin \alpha}{\sin(180 - 2\alpha)} = \frac{1}{2 \sin \alpha \cos \alpha} = \frac{1}{\sin 2\alpha}$$

$$\Rightarrow \frac{AC}{AB} = \frac{1}{\sqrt{2} \cos \alpha} = \frac{1}{\sqrt{2}} \Rightarrow \frac{AB}{AC} = \sqrt{2}$$



$$\begin{aligned} \frac{1}{r} &= A \text{ طول وتر } \Rightarrow \cos \hat{A} = 1 \Rightarrow \hat{A} = 90^\circ \\ &= B \text{ طول وتر } \Rightarrow \sin \hat{B} = \frac{1}{r} \Rightarrow \hat{B} = 10^\circ \\ \hat{B} \hat{O} \hat{A} &= 90^\circ; \hat{O} \hat{A} = \hat{O} \hat{B} = \hat{O} \hat{B} \hat{A} = \hat{O} \hat{A} \hat{B} = 90^\circ \\ \hat{O} \hat{B} \hat{C} &\Rightarrow \hat{B} = 70^\circ, \hat{C} = 70^\circ \\ \hat{G} \hat{A} \hat{C} &\Rightarrow \hat{C} = 10^\circ, \hat{A} = 10^\circ \\ AB &= \sqrt{r}, BC = \sqrt{r} \\ AC &= \frac{\sqrt{r} + \sqrt{r}}{r} \end{aligned}$$

$$S_{ABC} = \frac{1}{r} AC \times AB \times \sin \hat{A}$$

$$\begin{aligned} r \cos^r \alpha - \cos^r \alpha - \sin^r \alpha (-\cos^r \alpha) &= \cos^r \alpha (\underbrace{r \cos^r \alpha - 1}_{\cos^r \alpha} - \sin^r \alpha (-\cos^r \alpha)) \\ &= \cos^r \alpha (\cos^r \alpha) + \sin^r \alpha (\cos^r \alpha) \Rightarrow (\sin^r \alpha + \cos^r \alpha) (\cos^r \alpha) = 1 \Rightarrow \cos^r \alpha = 1 \\ \Rightarrow \sin^r \alpha &= 0 \end{aligned}$$

