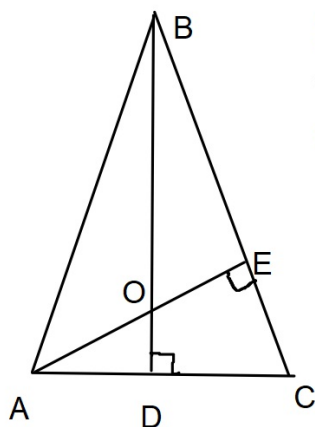




Рассмотрим 4-х угольник ODCE

$$\angle D = \angle E = 90^\circ \Rightarrow \angle DOC = 180^\circ - \angle C$$

$$\Rightarrow \angle AOB = \angle DOC = 180^\circ - \angle C \quad (\angle AOB \text{ и } \angle DOC - \text{вертикальные})$$

$\Rightarrow$ По теореме синусов для $\triangle ABC$:

$$\frac{AB}{\sin \angle C} = 2 \cdot R(\triangle ABC) \Rightarrow R(\triangle ABC) = \frac{AB}{2 \cdot \sin \angle C}$$

По т. синусов для $\triangle AOB$:

$$\frac{AB}{\sin \angle AOB} = 2 R(\triangle AOB) \Rightarrow R(\triangle AOB) = \frac{AB}{2 \sin \angle AOB}$$

$$\sin \angle AOB = \sin(180^\circ - \angle C) = \sin \angle C$$

$$\Rightarrow R(\triangle AOB) = R(\triangle ABC) \Rightarrow$$

$$R(\triangle AOB) : R(\triangle ABC) = 1 : 1$$