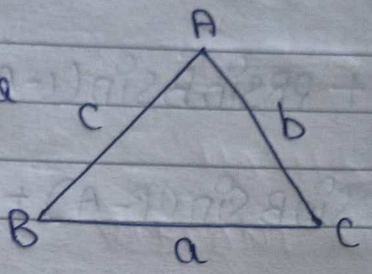
SOLUTION OF TRIANGLE

1. Sine law

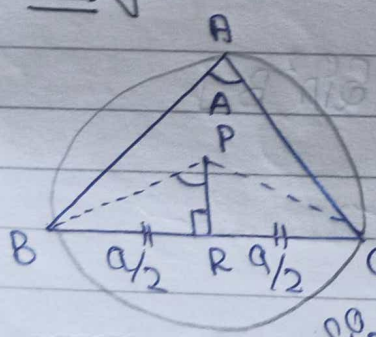
In any triangle



than

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C} = 2R$$

Proof →



Since

$\Delta BPR \cong \Delta CPR$

then

$\angle BPR = \angle RPC$

Since $2A = \angle BPC$

$$\sin A = \frac{a/2}{R}$$

$$2R = \frac{a}{\sin A}$$

$$\Rightarrow \quad a \propto \sin A$$