

### Question

$$AB = 430$$

$$BC = 835$$

$$CA = 910$$

Solving:

$$AC^2 = AB^2 + BC^2 - 2 \cdot AB \cdot BC \cdot \cos \angle B \Rightarrow$$

$$\Rightarrow \cos \angle B = \frac{AB^2 + BC^2 - AC^2}{2 \cdot AB \cdot BC} \Rightarrow \angle B = \arccos \frac{AB^2 + BC^2 - AC^2}{2 \cdot AB \cdot BC}.$$

$$BC^2 = AB^2 + AC^2 - 2 \cdot AB \cdot AC \cdot \cos \angle A \Rightarrow$$

$$\Rightarrow \cos \angle A = \frac{AB^2 + AC^2 - BC^2}{2 \cdot AB \cdot AC} \Rightarrow \angle A = \arccos \frac{AB^2 + AC^2 - BC^2}{2 \cdot AB \cdot AC}.$$

$$\angle C = 180^\circ - \angle A - \angle B$$

So, we have:

$$\angle A = \arccos \frac{430^2 + 910^2 - 835^2}{2 \cdot 430 \cdot 910} = \arccos \frac{315775}{782600} \approx 66^\circ.$$

$$\angle B = \arccos \frac{430^2 + 835^2 - 910^2}{2 \cdot 430 \cdot 835} = \arccos \frac{54025}{718100} \approx 86^\circ.$$

$$\angle C = 180^\circ - 66^\circ - 86^\circ = 28^\circ.$$

Answer:  $\angle A = 66^\circ$ ;  $\angle B = 86^\circ$ ;  $\angle C = 28^\circ$ .