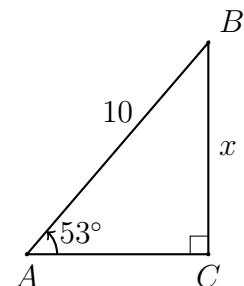


6.6 Pre-Quiz: Non-right triangle trigonometry

HSG.SRT.D.11

Round all values to three significant figures.

1. Do Now: Given right $\triangle ABC$ with $AB = 10$, $m\angle A = 53^\circ$. Find the value of $BC = x$.

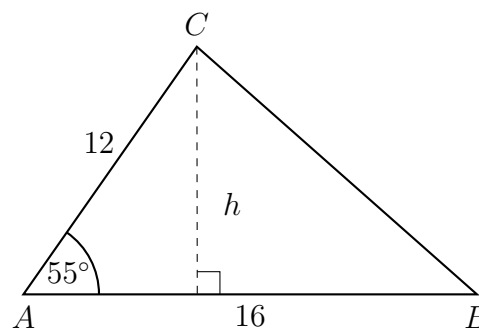


Area of a triangle sine formula

HSG.SRT.D.9

2. Given $\triangle ABC$ with $AC = 12$ centimeters, base $AB = 16$, and the base $\hat{A} = 55^\circ$. (diagram not to scale)

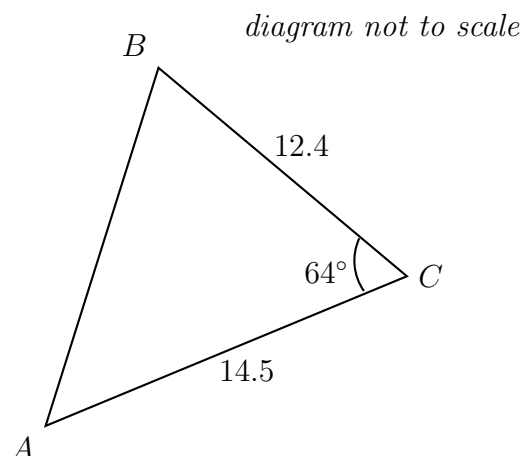
- (a) Find altitude h cm using $\sin \hat{A} = \frac{h}{12}$.



- (b) Find the area of the triangle

$$\text{Area} = \frac{1}{2}bh$$

3. Find the area of the given triangle. Triangle area using sine formula: $A = \frac{1}{2}ab \sin C$



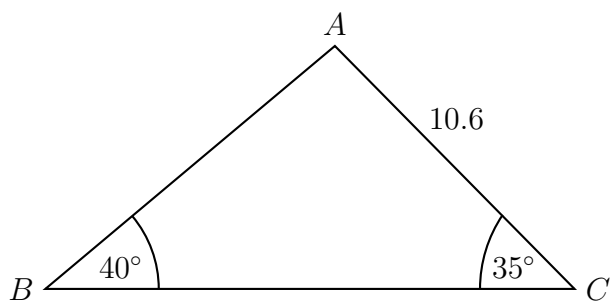
The sine rule**HSG.SRT.D.11**

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

4. The following diagram shows triangle ABC , with $\hat{A} = 40^\circ$, $\hat{C} = 35^\circ$, and $AC = 10.6$ cm.

Find AB .

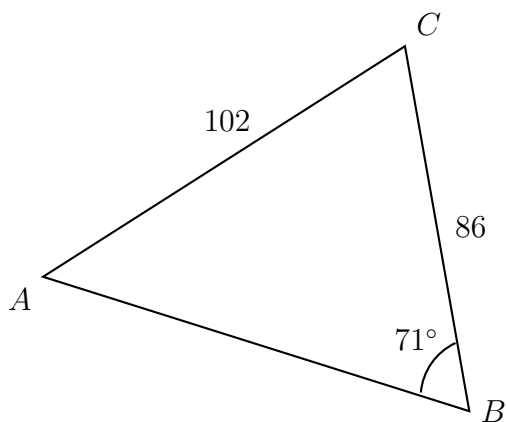
diagram not to scale



5. Triangle ABC is drawn with $AC = 102$ cm, $BC = 86$ cm, and $\hat{B} = 71^\circ$.

Find \hat{A} .

diagram not to scale



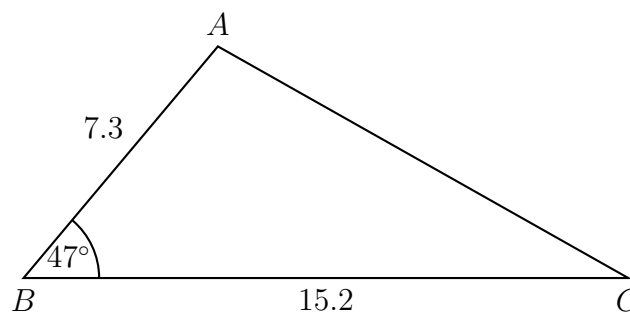
The cosine rule**HSG.SRT.D.11**

$$c^2 = a^2 + b^2 - 2ab \cos C$$

6. As shown in the diagram, triangle ABC has $\hat{A}BC = 47^\circ$, $AB = 7.3$, and $BC = 15.2$.

Find AC .

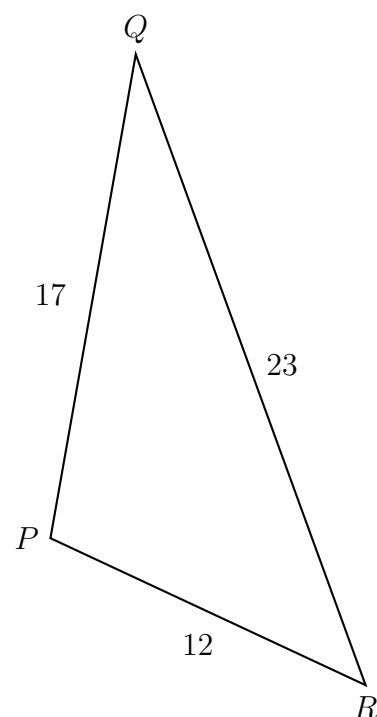
diagram not to scale



7. The following diagram shows triangle PQR . (*not to scale*)

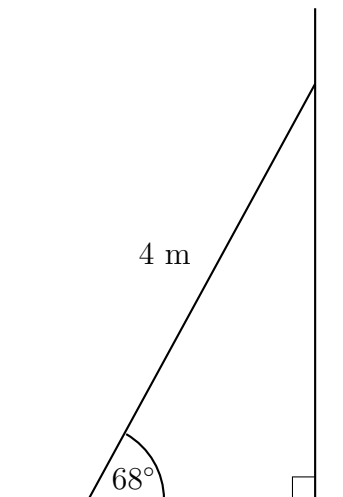
$PQ = 17$ meters, $QR = 23$ m., and $PR = 12$ m.

Find $\hat{P}QR$.



8. A ladder that is 4 meters long leans against a wall making an angle to the ground of 68° , as shown in the diagram. (not drawn to scale)

- (a) Find the height of the top of the ladder above the ground.

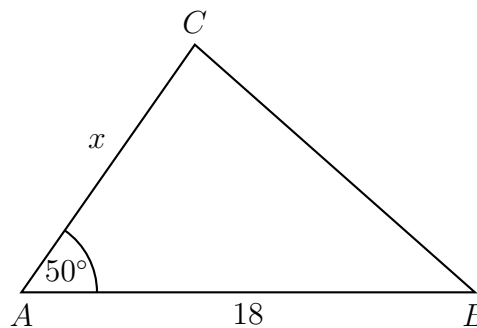


- (b) Find the distance of the bottom of the ladder to the base of the wall.

9. The following diagram shows a triangle ABC . (diagram not to scale)

The area of the triangle ABC is 80 cm^2 , $AB = 18 \text{ cm}$, $AC = x \text{ cm}$, and $\hat{BAC} = 50^\circ$.

- (a) Find x .



- (b) Find BC .