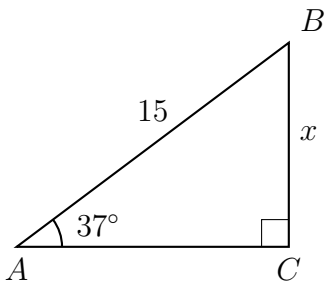
BECA / IB Math 6 Geometry Name:
1 April 2022

6.7 Quiz: Non-right triangle trigonometry **HSG.SRT.D.11**

Round all values to three significant figures.

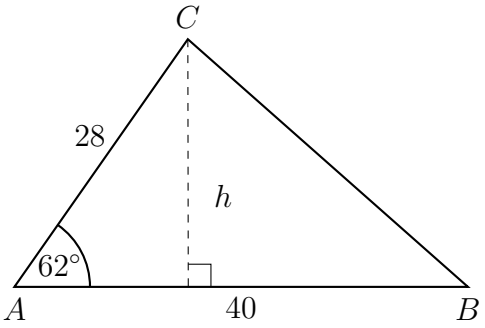
1. Right triangle ABC is shown with $AB = 15$, $m\angle A = 37°$. Find the value of $BC = x$.



2. Given $\triangle ABC$ with $AC = 28$ centimeters, base $AB = 40$, and $\hat{A} = 62°$.

   (a) Find altitude h cm using $\sin\hat{A} = \dfrac{h}{28}$.

   diagram not to scale

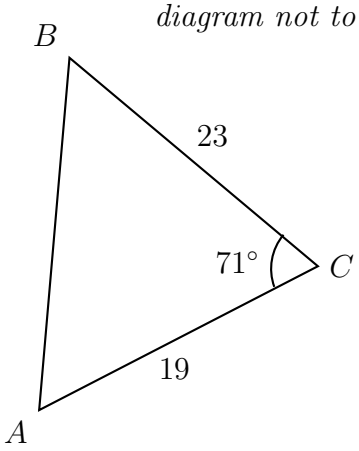


   (b) Find the area of the triangle

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

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

   diagram not to scale



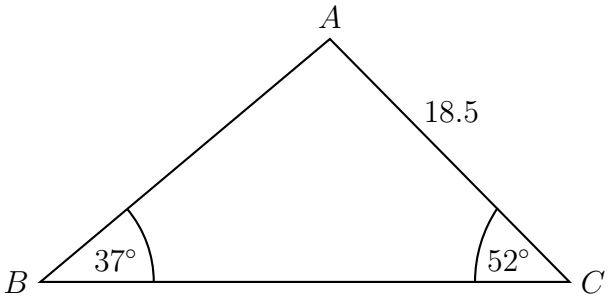
The sine rule

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

4. The following diagram shows triangle ABC, with $A\hat{B}C = 37°$, $A\hat{C}B = 52°$, and $AC = 18.5$ cm.

   Find AB.

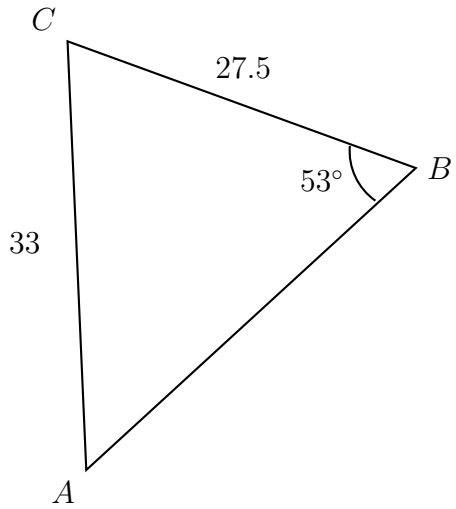
   diagram not to scale



5. Triangle ABC is drawn with $AC = 33$ cm, $BC = 27.5$ cm, and $A\hat{B}C = 53°$.

   Find $B\hat{A}C$.

   diagram not to scale

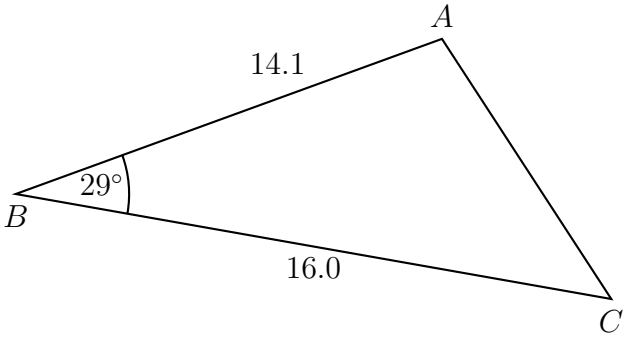


BECA / IB Math 6 Geometry Name:
1 April 2022

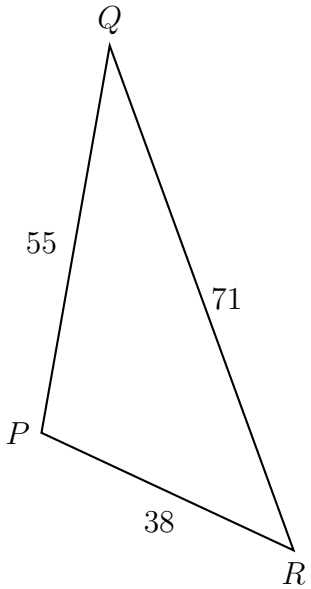
The cosine rule

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

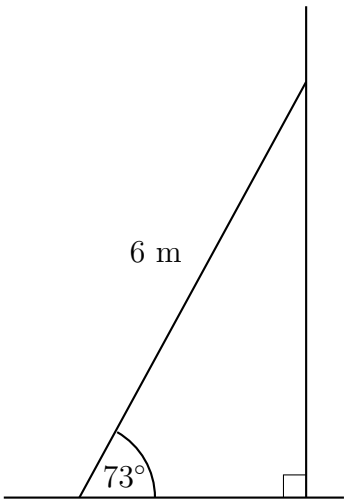
6. As shown in the diagram, triangle ABC has $A\hat{B}C = 29°$, $AB = 14.1$, and $BC = 16.0$.
   Find AC. *diagram not to scale*



7. The following diagram shows triangle PQR. (*not to scale*)
   $PQ = 55$ meters, $QR = 71$ m., and $PR = 38$ m.
   Find $Q\hat{P}R$.



8. A ladder that is 6 meters long leans against a wall making an angle to the ground of 73°, as shown in the diagram. (not drawn to scale)



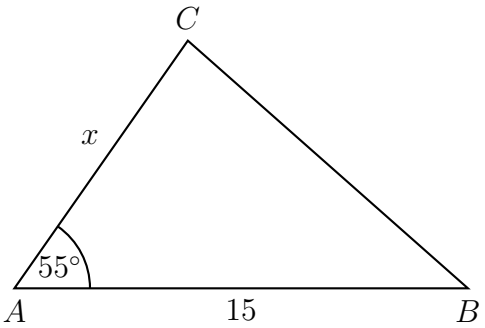
(a) Find the height of the top of the ladder above the ground.

(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 75 cm^2, $AB = 15$ cm, $AC = x$ cm, and $B\hat{A}C = 55°$.

(a) Find x.



(b) Find BC.