

6.13 Test Geometry

HSG.SRT.D.11

Find exact values or round decimal approximations to three significant figures.

1. As shown, right $\triangle ABC$ has $AC = 8$, $BC = 15$, $AB = 17$, $m\angle C = 90^\circ$.

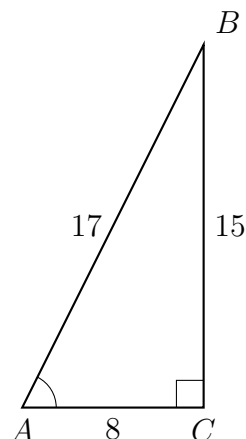
Express each trigonometric ratio as a fraction.

(a) $\sin A =$

(b) $\cos A =$

(c) $\tan A =$

(d) Find $m\angle A$.

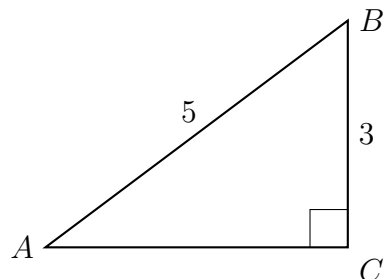


2. Right triangle $\triangle ABC$ is shown with measures as marked.

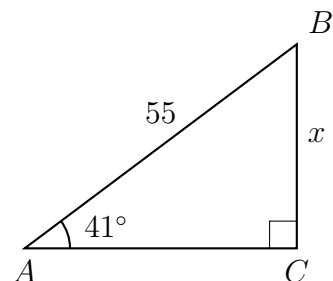
(a) Write down $\sin A$.

(b) Find the length of side AC .

(c) Find the angle measure of $\angle A$.



3. Right triangle ABC is shown with $AB = 55$, $m\angle A = 41^\circ$. Find the value of $BC = x$.



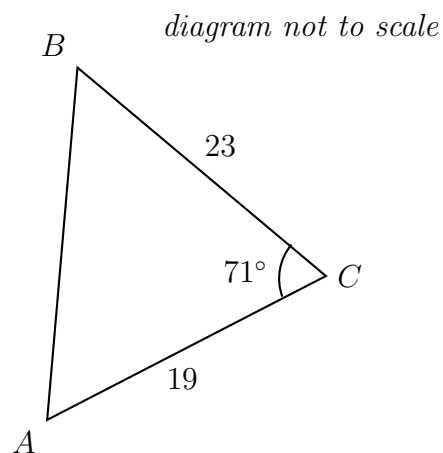
Given formulas

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

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

$$\text{Triangle area: } A = \frac{1}{2}ab \sin C$$

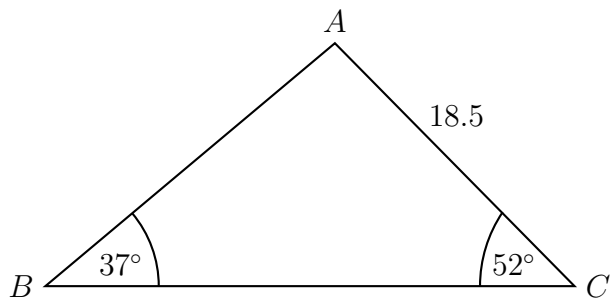
4. Find the area of the given triangle.



5. The following diagram shows triangle ABC , with $\hat{A}BC = 37^\circ$, $\hat{A}CB = 52^\circ$, and $AC = 18.5$ cm.

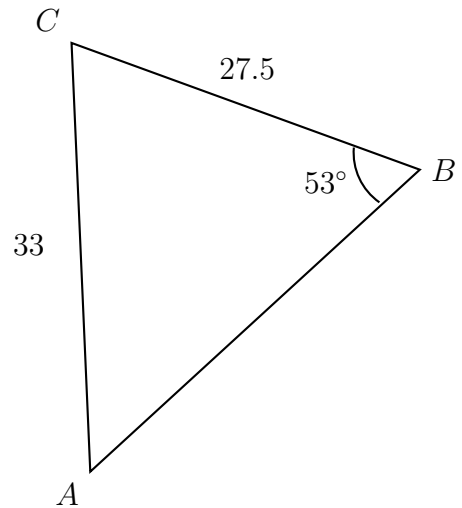
Find AB .

diagram not to scale



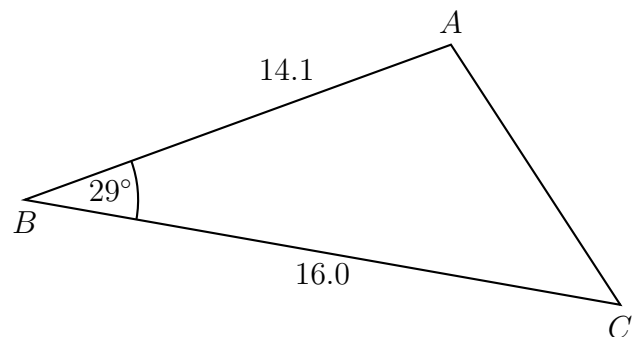
6. Triangle ABC is drawn with $AC = 33$ cm, $BC = 27.5$ cm, and $\hat{A}BC = 53^\circ$.
Find $\hat{B}AC$.

diagram not to scale



7. As shown in the diagram, triangle ABC has $\hat{A}BC = 29^\circ$, $AB = 14.1$, and $BC = 16.0$.
Find AC .

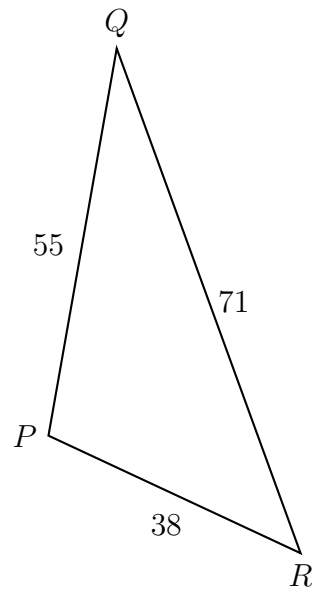
diagram not to scale



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

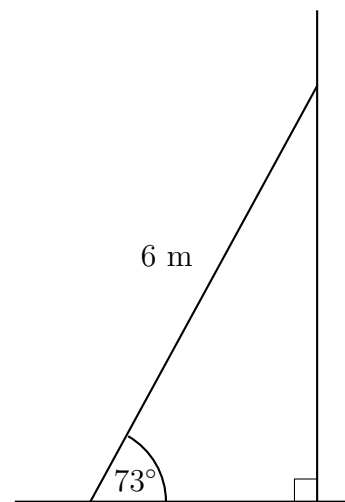
$PQ = 55$ meters, $QR = 71$ m., and $PR = 38$ m.

Find \hat{QPR} .



9. 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.

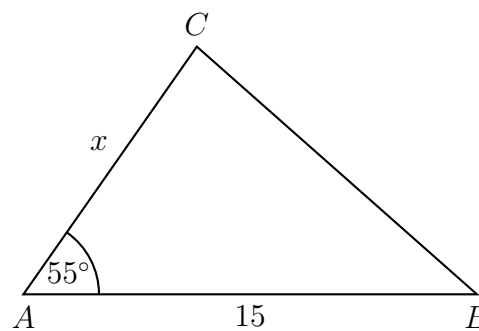


- (b) Find the distance of the bottom of the ladder to the base of the wall.

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

The area of the triangle ABC is 75 cm^2 , $AB = 15 \text{ cm}$, $AC = x \text{ cm}$, and $\hat{BAC} = 55^\circ$.

- (a) Find x .



- (b) Find BC .