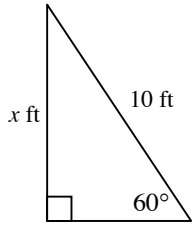


The Law of Sines

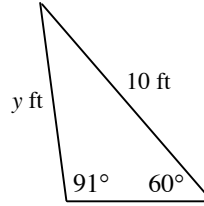
Jen places a 10-foot ladder against a wall so that it makes an angle of 60° with the flat ground.

Note: Diagrams are *not* drawn to scale.

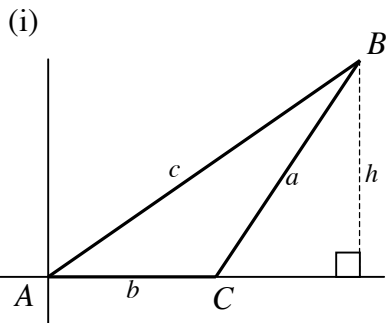
- a) She determines the distance that the ladder goes up the wall is x feet, as shown below. Find the value of x to the *nearest ten thousandth of a foot*.



- b) Then she discovers that the wall is not perpendicular to the ground; it actually forms a 91° angle, as shown below. Find the correct distance, y , to the *nearest ten thousandth of a foot*.

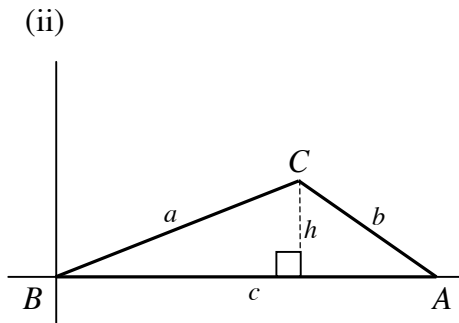


Below is $\triangle ABC$ drawn in three different positions in the coordinate plane.



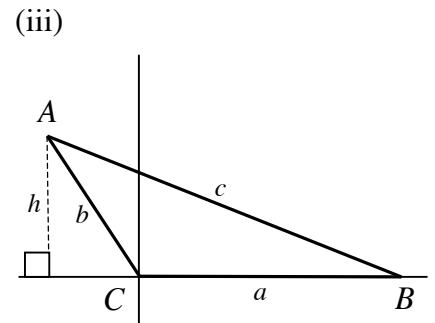
Find $\sin A$.

Find the area of $\triangle ABC$ using \overline{AC} as the base.



Find $\sin B$.

Find the area of $\triangle ABC$ using \overline{BA} as the base.



Find $\sin C$.

Find the area of $\triangle ABC$ using \overline{CB} as the base.

Area of Triangle

Use Law of Sines when

- 1)
- 2)

Law of Sines

Exercises:

1. In $\triangle ABC$, $a = 20$, $c = 9$, and $m\angle B = 30^\circ$. Find the area of $\triangle ABC$.
2. In $\triangle ABC$, $m\angle B = 110^\circ$, $a = 3$, $b = 9$. Find $m\angle A$ to the nearest tenth of a degree.
3. In $\triangle KLM$, $m\angle K = 45^\circ$, $m\angle L = 105^\circ$, and $k = 20$. Find the exact value of m .