

'Solving' Right Triangles

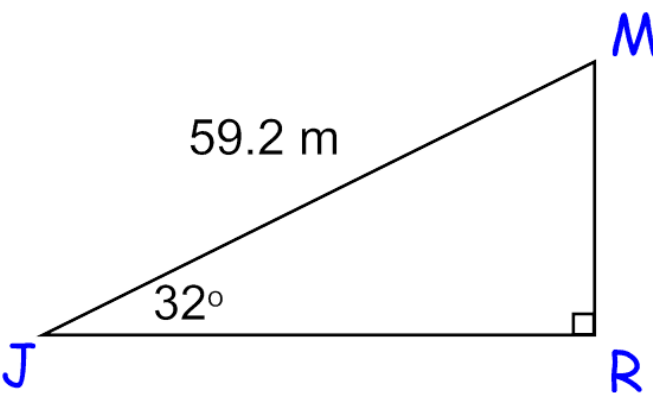
Solving a triangle means to determine the lengths of all sides and the measures of all angles.

To solve triangles we can use:

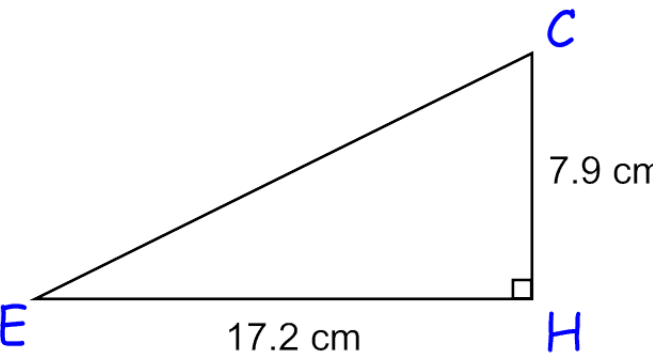
\sin , \cos , \tan , \sin^{-1} , \cos^{-1} , \tan^{-1} , The Pythagorean Theorem and even subtraction!

Often, there is more than one way to solve a triangle, so we typically have some choices to make.

If you were asked to "solve" the triangle below, what would you do?

 <p>A right-angled triangle with vertices J, R, and M. The right angle is at vertex R. The hypotenuse JM is labeled 59.2 m. The angle at vertex J is labeled 32°. The side JR is the horizontal base, and the side RM is the vertical height.</p>	<p>If I were asked to solve this triangle, I would:</p>
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If you were asked to "solve" the triangle below, what would you do?

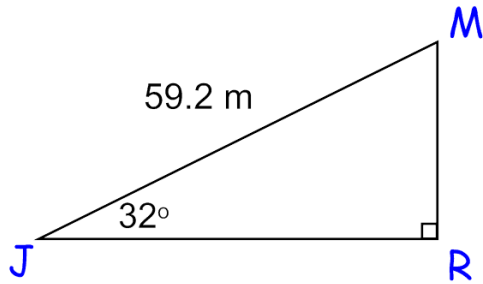
 <p>A right-angled triangle with vertices E, H, and C. The right angle is at vertex H. The horizontal base EH is labeled 17.2 cm. The vertical height HC is labeled 7.9 cm. The hypotenuse EC is the slanted side.</p>	<p>If I were asked to solve this triangle, I would:</p>
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Steps to Solving Right Triangles

Given one angle and one side.

1. Determine the other angle by subtracting from 90.
2. Find one of the missing sides using sin, cos or tan.
3. Find the third side using sin, cos or tan OR The Pythagorean Theorem.
4. List all sides and angles.

Solve the triangle below. Show your work.



Given no angles and two sides.

1. Find one of the missing angles using \sin^{-1} , \cos^{-1} , or \tan^{-1} .
2. Find the other angle by subtracting from 90.
3. Find the third side using sin, cos or tan OR The Pythagorean Theorem.
4. List all sides and angles.

Solve the triangle below. Show your work.

