

Using the Sine and Cosine Ratios to Calculate Lengths

We can use the sine or cosine ratio to calculate the length of a side in a right triangle when the measure of one acute angle and the length of the hypotenuse are known.

Example 1: Using the Sine or Cosine Ratio to Determine the Length of a Side

Find the length of RS to the nearest tenth of a metre.

Example 2: Using the Sine or Cosine Ratio to Determine the Length of the Hypotenuse

Find the length of the hypotenuse to the nearest tenth of a centimetre.

Example 3: Using Sine or Cosine to Solve a Problem

A surveyor makes the measurements shown in the diagram to find the distance between two observation towers on opposite sides of a river. How far apart are the towers? Round your answer to the nearest metre.