

The Tangent Ratio – Part II

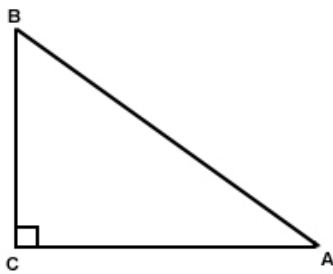
Direct measurement – using a measuring instrument to determine a length or an angle

Indirect measurement – using mathematical reasoning to calculate a length or an angle

We have shown how to create tangent ratios, and how to use this ratio to solve for the angles of a triangle. Now we will use the same ratio to show how we can solve for the lengths of a triangle!

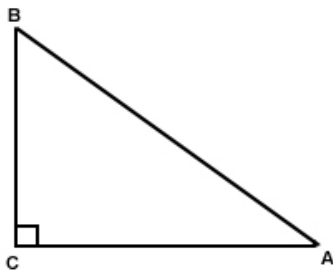
Example 1: Determining the Length of the Side Opposite a Given Angle

Find the length of BC to the nearest tenth of a centimetre given $\angle A = 28^\circ$ and side AC = 23.0-cm.



Example 2: Determining the Length of the Side Adjacent to a Given Angle

Find the length of AC to the nearest tenth of a centimetre given $\angle A = 35^\circ$ and side BC = 5.0-cm.



Example 3: Using the Tangent Ratio to Solve a Problem

A wire supports a flagpole. The angle between the wire and the level ground is 73° . The wire is anchored to the ground 10-m from the base of the pole. How high up the pole does the wire reach?