

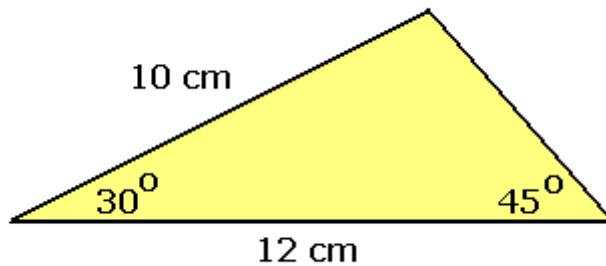
MATC9 Ch02.1 Key Concepts 1 Right Triangles Worked Example

Example: Can the Pythagorean theorem be used to find the unknown side of the triangle shown? Explain.

Solution: No. Since the angles in a triangle add to give 180° , the third angle is

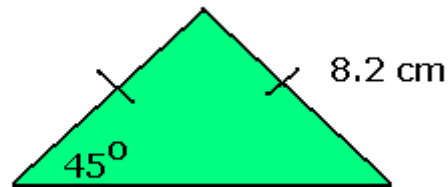
$$180^\circ - 45^\circ - 30^\circ = 105^\circ$$

This is not a right-angled triangle. The Pythagorean theorem only applies to right-angled triangles.



Practice:

1. Can the Pythagorean theorem be used to find the hypotenuse of the triangle shown? Explain.



2. A radio transmitting antenna casts a shadow 16.4 m long. A guy wire 22.8 m long runs from the end of the shadow to the top of the antenna. Is it reasonable to use the Pythagorean theorem to find the height of the antenna?

Answers: 1. Yes. 2. Yes.