

Lesson 2 Assessment

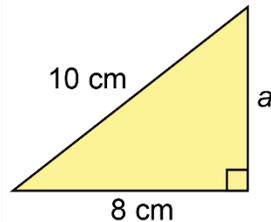
Solving Problems with the Pythagorean Relationship

Solving Problems with the Pythagorean Relationship

Describes how to use the Pythagorean relationship

I can substitute the known side lengths into $a^2 + b^2 = c^2$, where a and b are the lengths of the shorter sides and c is the length of hypotenuse, to find the unknown length in a right triangle.

Uses the Pythagorean relationship to determine an unknown side length



$$a^2 + b^2 = c^2$$

$$a^2 + 8^2 = 10^2$$

$$a^2 + 64 = 100$$

$$a^2 = 100 - 64$$

$$a^2 = 36$$

$$a = \sqrt{36}$$

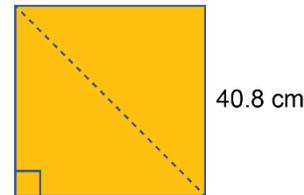
$$a = 6$$

The unknown side length is 6 cm.

Identifies a right triangle in a real-life situation

A gameboard is a square with sides 40.8 cm. What is the length of the diagonal across the gameboard?

Draw a diagram.



$$a^2 + b^2 = c^2$$

$$40.8^2 + 40.8^2 = c^2$$

$$1664.64 + 1664.64 = c^2$$

$$c^2 = 3329.28$$

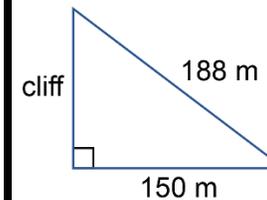
$$c = \sqrt{3329.28}$$

$$c \approx 57.7$$

The length of the gameboard diagonal is about 57.7 cm.

Uses the Pythagorean relationship to solve problems involving an unknown side length in a right triangle

The horizontal distance from a surveyor to the base of a cliff is measured to be 150 m. The distance from the surveyor to the top of the cliff is 188 m. What is the height of the cliff?



$$a^2 + b^2 = c^2$$

$$a^2 + 150^2 = 188^2$$

$$a^2 + 22\,500 = 35\,344$$

$$a^2 = 35\,344 - 22\,500$$

$$a^2 = 12\,844$$

$$a = \sqrt{12\,844}$$

$$a \approx 113.33$$

The height of the cliff is about 113.33 m.

Lesson 2 Assessment

Solving Problems with the Pythagorean Relationship

Observations/Documentation

--	--	--	--