

Special Triangles and the Unit Circle - Guided Lesson Explanation**Explanation#1**

This is a right triangle with two equal sides so it must be a $45^\circ - 45^\circ - 90^\circ$ triangle.

You are given that the both the sides are 12. If the first and second value of the ratio $n : n : n\sqrt{2}$ is 12 then the length of the third side is $12\sqrt{2}$.

The length of the hypotenuse is $12\sqrt{2}$ inches.

Explanation#2

Test the ratio of the lengths to see if it fits the $n : n\sqrt{3} : 2n$ ratio.

$$8 : 8\sqrt{3} : ? = n : n\sqrt{3} : 2n$$

Calculate the third side.

$$2n = 2 \times 8 = 16$$

The length of the hypotenuse is 16 inches.

Explanation#3

The triangle ABC is a right triangle with two equal sides.

Thus, it is a $45^\circ - 45^\circ - 90^\circ$ triangle.

The lengths of the sides of the triangle are in the ratio $1:1:\sqrt{2}$.

Thus, if one side is 9 inches, then the length of the hypotenuse is $9\sqrt{2}$ inches is 12.73 cm.

