

Name \_\_\_\_\_

## The Pythagorean Theorem

Simplify.

1.)  $\sqrt{50}$

2.)  $\sqrt{48}$

3.)  $\sqrt{125}$

4.)  $\sqrt{108}$

5.)  $3\sqrt{6} + 5\sqrt{6}$

6.)  $\sqrt{8} \cdot \sqrt{2}$

7.)  $10\sqrt{20}$

8.)  $\frac{3\sqrt{8}}{12}$

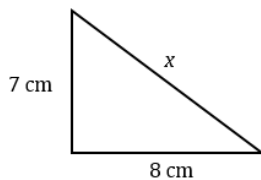
Rationalize the denominator.

9.)  $\frac{1}{\sqrt{3}}$

10.)  $\frac{4}{\sqrt{2}}$

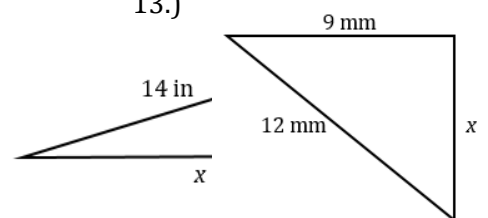
Find the length of the missing side. Round your answer to the nearest tenth.

11.)



12.)

13.)



Could the lengths listed be lengths for the sides of a right triangle?

14.) 6, 8, 10

15.) 7 15, 17

**Show your work for each problem below. Round your answer to the nearest tenth.**

16.) The bottom of a ladder must be placed 3 feet from a wall. The ladder is 10 feet long. How far above the ground does the ladder touch the wall?

17.) A soccer field is a rectangle 100 meters wide and 130 meters long. The coach asks players to run from one corner to the other corner diagonally across. What is that distance?

18.) David leaves the house to go to school. He walks 200 meters west and 125 meters north. How far away is he from his starting point? (the diagonal)

## The Pythagorean Theorem - Answers

Simplify.

1.)  $\sqrt{50}$

$5\sqrt{2}$

2.)  $\sqrt{48}$

$4\sqrt{3}$

3.)  $\sqrt{125}$

$5\sqrt{5}$

4.)  $\sqrt{108}$

$6\sqrt{3}$

5.)  $3\sqrt{6} + 5\sqrt{6}$

$8\sqrt{6}$

6.)  $\sqrt{8} \cdot \sqrt{2}$

4

7.)  $10\sqrt{20}$

$20\sqrt{5}$

8.)  $\frac{3\sqrt{8}}{12}$

$\frac{\sqrt{2}}{2}$

Rationalize the denominator.

9.)  $\frac{1}{\sqrt{3}}$

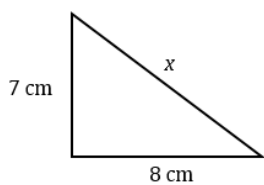
$\frac{\sqrt{3}}{3}$

10.)  $\frac{4}{\sqrt{2}}$

$2\sqrt{2}$

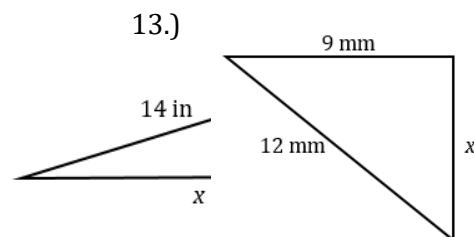
Find the length of the missing side. Round your answer to the nearest tenth.

11.)



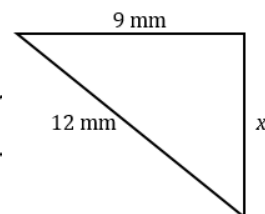
$10.6 \text{ cm}$

12.)



$13.1 \text{ in}$

13.)



$7.9 \text{ mm}$

**Could the lengths listed be lengths for the sides of a right triangle?**

14.) 6, 8, 10

Yes

15.) 7, 15, 17

No

**Show your work for each problem below. Round your answer to the nearest tenth.**

16.) The bottom of a ladder must be placed 3 feet from a wall. The ladder is 10 feet long. How far above the ground does the ladder touch the wall?

$$x^2 + 3^2 = 10^2$$

$$x \approx 9.5 \text{ feet}$$

17.) A soccer field is a rectangle 100 meters wide and 130 meters long. The coach asks players to run from one corner to the other corner diagonally across. What is that distance?

$$100^2 + 130^2 = x^2$$

$$x \approx 164 \text{ meters}$$

18.) David leaves the house to go to school. He walks 200 meters west and 125 meters north. How far away is he from his starting point? (the diagonal)

$$200^2 + 125^2 = x^2$$

$$x \approx 235.8 \text{ meters}$$