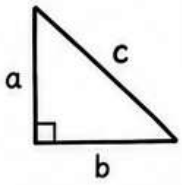
Name: _____ prtutorial.in Date: _____



Pythagorean Theorem Worksheet

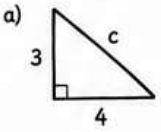
Use the Pythagorean Theorem $a^2 + b^2 = c^2$ to find the missing side.

Where a and b are the legs of a right triangle and c is the hypotenuse (the longest side).

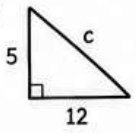
In a right triangle, the square of the hypotenuse equals the sum of the squares of the legs.

1. Find the hypotenuse (c).

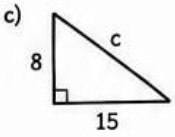
Use $c = \sqrt{a^2 + b^2}$

a) 

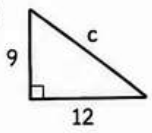
c = _____

b) 

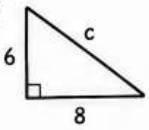
c = _____

c) 

c = _____

d) 

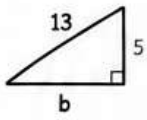
c = _____

e) 

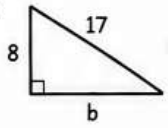
c = _____

2. Find the missing leg (a or b).

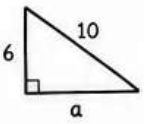
Use $a = \sqrt{c^2 - b^2}$ or $b = \sqrt{c^2 - a^2}$

a) 

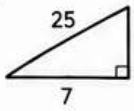
b = _____

b) 

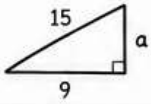
b = _____

c) 

a = _____

d) 

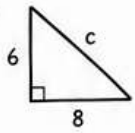
a = _____

e) 

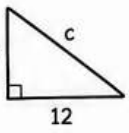
a = _____

3. Find the value of the missing side.

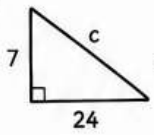
Use $a^2 + b^2 = c^2$.

a) 

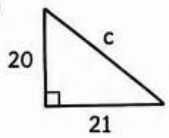
c = _____

b) 

c = _____

c) 

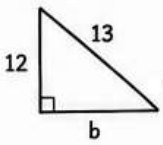
c = _____

d) 

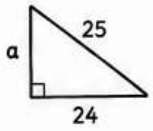
c = _____

4. Find the missing side.

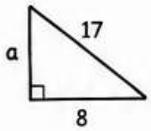
Use $a^2 + b^2 = c^2$.

a) 

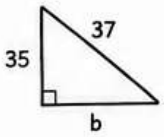
b = _____

b) 

a = _____

c) 

a = _____

d) 

b = _____

5. Word problems.

Use the Pythagorean Theorem to solve.

a) A ladder 13 m long reaches the top of a wall. The base of the ladder is 5 m from the wall. How tall is the wall?

Answer: _____

b) A rectangular field is 12 m long and 5 m wide. What is the length of the diagonal of the field?

Answer: _____

c) A kite string is 25 m long. If the kite is 7 m above the ground, how far is it from the point directly below the kite?

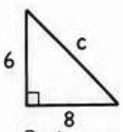
Answer: _____

d) A square has a diagonal of 10 cm. What is the length of one side of the square?

Answer: _____

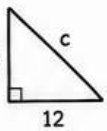
6. Find the perimeter of the triangle.

Use $a^2 + b^2 = c^2$ to find the missing side.

a) 

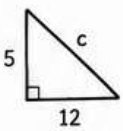
c = _____

Perimeter = _____

b) 

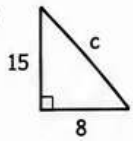
c = _____

Perimeter = _____

c) 

c = _____

Perimeter = _____

d) 

c = _____

Perimeter = _____

7. True or False.

Write T for True or F for False.

a) In a right triangle, the hypotenuse is the shortest side. ☐

b) If $a^2 + b^2 = c^2$, then the triangle is a right triangle. ☐

c) A triangle with sides 7, 24 and 25 is a right triangle. ☐

d) If the hypotenuse is 10 and one leg is 6, the other leg is 8. ☐

8. Challenge – Find the missing value.

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

a) If $a = 9$ and $b = 12$, find c. $c =$ _____

b) If $a = 15$ and $c = 17$, find b. $b =$ _____

c) If $b = 8$ and $c = 17$, find a. $a =$ _____

d) If $a = 7$ and $c = 25$, find b. $b =$ _____

★ You can do it! ★