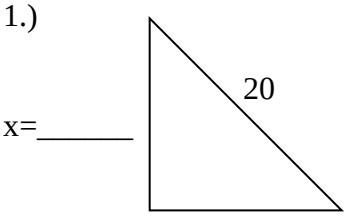
Name: _____

Pythagorean Theorem Study Guide

Free Response:

Find the length of the missing side.

1.)



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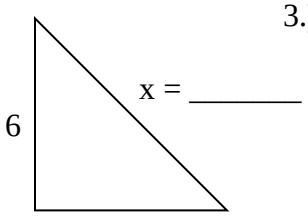

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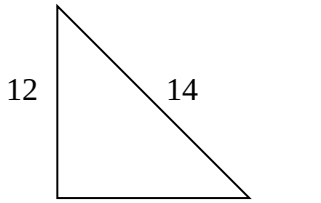
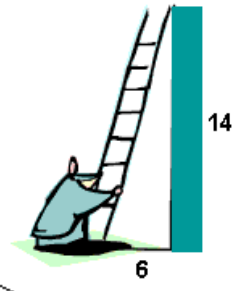


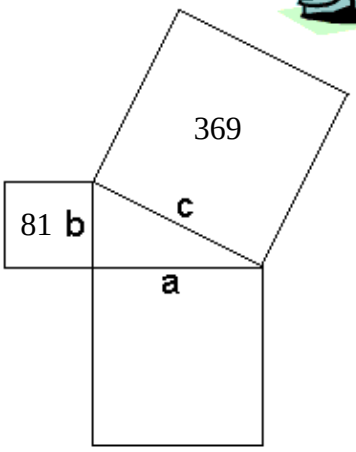
Determine whether the triangle with the given side lengths is a right triangle by writing "yes" or "no" in the blank..

4.) a = 6, b = 8, c = 10 _____ 5.) a = 14, b = 16, c =18 _____

6. What is the length of the ladder? It's 6 ft. from the house at the bottom and touches the wall 14 ft. up at the top. **Simplify your answer**



7. Find the area of the missing square off of leg b if the area of one square is 369 and the area of another is 81.



Multiple Choice:

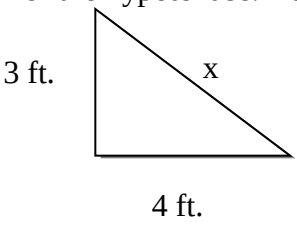
8.) Multiple Choice: Find the length of the hypotenuse. Round to the nearest tenth if necessary.

a. 6.9 ft

b. 2.8 ft.

c. 5.7 ft.

d. 5 ft.

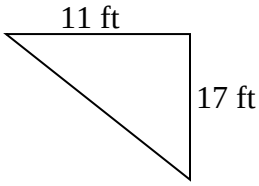


Name: _____

9.) Multiple Choice: In triangle ABC, side AB has a length of 6cm and side BC has a length of 10cm. What is the length of side AC?

a) 4 cm b) 6 cm c) 11.66 cm d) 8 cm

10) Multiple Choice: In the given triangle, find the missing length to the nearest tenth.



a) 20.2 ft b) 7.5 ft. c) 11.7 ft. d) 17.3 ft.

Free Response:

11) A rectangular flower bed is 9 feet wide and 12 feet long. What is the length of the diagonal?

12) The shortest leg of a right triangle is 27 units. The other leg is the solution to $2x - 5 = 67$. What is the length of the hypotenuse?

13) Bobby and his family went to the playground. The slide is 13 feet long. The end of the slide is 7 feet away from the stairs. The stairs extend 2 feet higher than the end of the slide. How tall are the stairs?

Short Answer:

14). Persuade Mr. Zorn whether the numbers 12, 16, and 20 make a right triangle or not. Make sure to state reasons for and against your belief.

Vocabulary:

15) Define "Legs": _____

16) Define "Hypotenuse": _____

17) Write the formula for the Pythagorean Theorem: _____.

18) If the area of the square off of one side of the right triangle is 81, what is the length of the side? _____

19) Pythagorean Theorem only works on _____ triangles.

20) Explain what the b^2 came from in Pythagorean Theorem: _____.

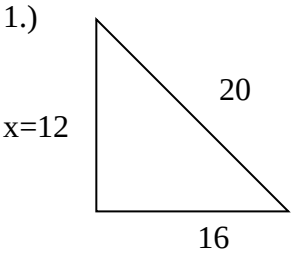
Name: _____

ANSWERS: Pythagorean Theorem Study Guide

Free Response:

Find the length of the missing side.

1.)



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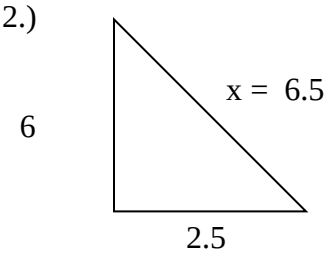

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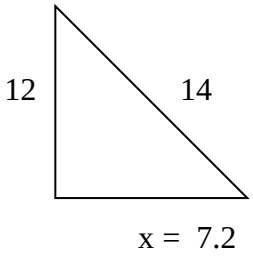


Determine whether the triangle with the given side lengths is a right triangle by writing "yes" or "no" in the blank..

4.) a = 6, b = 8, c = 10 YES 5.) a = 14, b = 16, c =18 NO

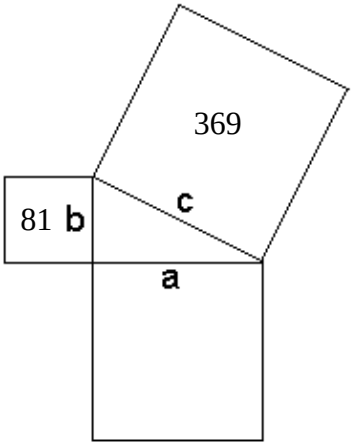
6. What is the length of the ladder? It's 6 ft. from the house at the bottom and touches the wall 14 ft. up at the top. **Simplify your answer**

$14^2 + 6^2 = 232$

$c^2 = 232$

$c = \sqrt{232} = 15.2$

7. Find the area of the missing square off of **leg a** if the area of one square is 369 and the area of another is 81.



Area of missing leg = 369 – 81 = 288

Multiple Choice:

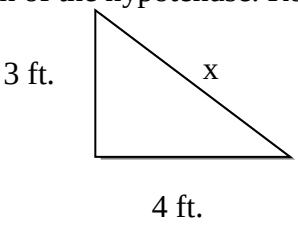
8.) Multiple Choice: Find the length of the hypotenuse. Round to the nearest tenth if necessary.

a. 6.9 ft

b. 2.8 ft.

c. 5.7 ft.

d. 5 ft.

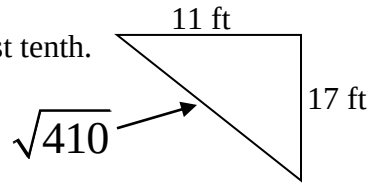


Name: _____

9.) Multiple Choice: In triangle ABC, side AB has a length of 6cm and side BC has a length of 10cm. What is the length of side AC? $\sqrt{136}$

a) 4 cm b) 6 cm c) 11.66 cm d) 8 cm

10) Multiple Choice: In the given triangle, find the missing length to the nearest tenth.



a) 20.2 ft b) 7.5 ft. c) 11.7 ft. d) 17.3 ft.

Free Response:

11) A rectangular flower bed is 9 feet wide and 12 feet long. What is the length of the diagonal?

The Diagonal is **15 feet long** (shortcut is the use the rule of a 3-4-5 triangle)

12) The shortest leg of a right triangle is 27 units. The other leg is the solution to $2x - 5 = 67$. What is the length of the hypotenuse?

Solve for x to get **x = 36**
Use Pythagorean Theorem to find length of the Hypotenuse which equals **45**

13) Bobby and his family went to the playground. The slide is 13 feet long. The end of the slide is 7 feet away from the stairs. The stairs extend 2 feet higher than the end of the slide. How tall are the stairs?

Stairs are equal to **12.9**. The extension of the stairs is 2 and the rest of the stairs is 10.9.

Short Answer:

14). Persuade Mr. Zorn whether the numbers 12, 16, and 20 make a right triangle or not. Make sure to state reasons for and against your belief.

Since $12^2 + 16^2 = 13^2$ it satisfied the Pythagorean Theorem which proves that **these three sides do form a right triangle. They make up what is called a Pythagorean Triple.**

Name: _____

Vocabulary:

15) Define "Legs": **The shorter of the two legs of a right triangle that form the right angle.**

16) Define "Hypotenuse": **The longest side of a right triangle and the side opposite the right angle.**

17) Write the formula for the Pythagorean Theorem: $a^2 + b^2 = c^2$.

18) If the area of the square of one side of the right triangle is 81, what is the length of the side? **9 is the side length- You just take the square root of 81**

19) Pythagorean Theorem only works on **Right** triangles.

20) Explain what the b^2 came from in Pythagorean Theorem: **This can be found by using** $b^2 = c^2 - a^2$.