

◆ Aksum Math

Name: _____

Pythagorean Theorem

Date: _____

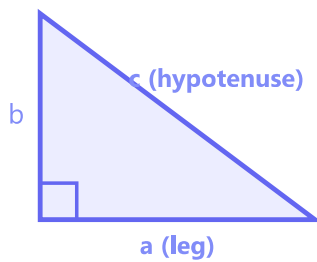
Geometry · Grade 8

Score: _____ / 12

● Easy · 12 Questions

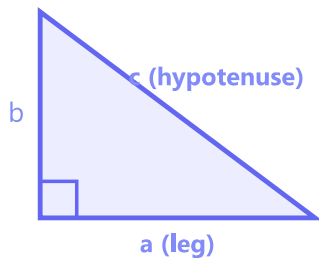
Solve each problem. Show your work in the space provided. Write your answer on the line.

1. In a right triangle, the two shorter sides are called legs and the longest side is called the ____.



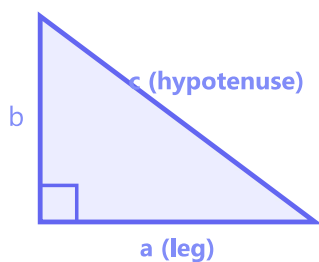
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2. State the Pythagorean Theorem using side labels a , b , and c (where c is the hypotenuse).



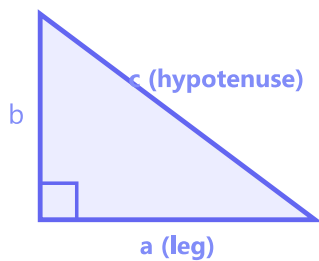
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3. A right triangle has legs $a = 3$ and $b = 4$. Find the hypotenuse c .



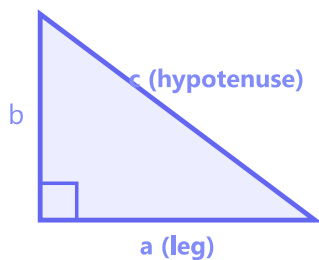
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4. A right triangle has legs $a = 5$ and $b = 12$. Find the hypotenuse c .



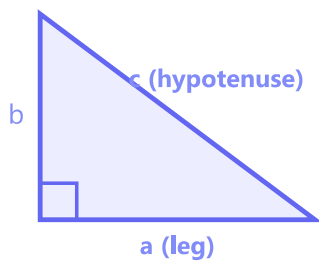
Answer: _____

5. A right triangle has legs $a = 6$ and $b = 8$. Find the hypotenuse c .



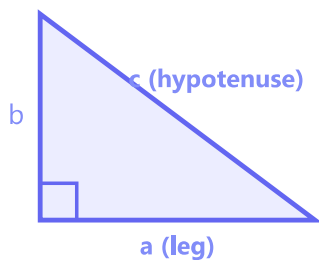
Answer: _____

6. A right triangle has hypotenuse $c = 10$ and one leg $a = 6$. Find b .



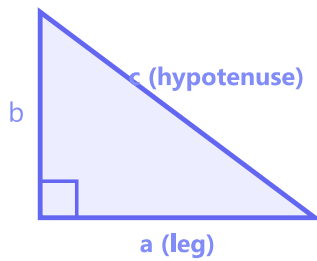
Answer: _____

7. A right triangle has hypotenuse $c = 13$ and one leg $a = 5$. Find b .



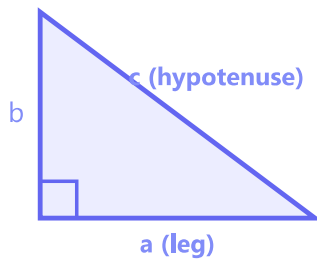
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8. Is (3, 4, 5) a Pythagorean triple? Show your work.



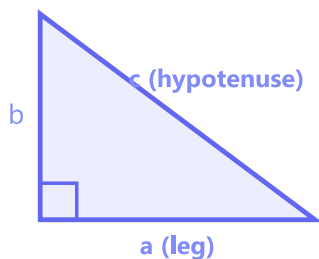
Answer: _____

9. Is (5, 12, 13) a Pythagorean triple?



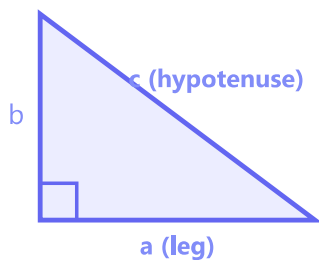
Answer: _____

10. A right triangle has legs 9 and 12. Find the hypotenuse. (Leave exact.)



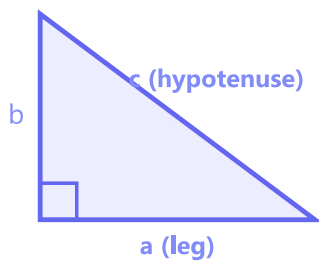
Answer: _____

11. What type of angle is always found in a right triangle?



Answer: _____

12. If $a = 8$ and $c = 17$, find b in the right triangle.



Answer: _____

Answer Key Pythagorean Theorem — Easy

1. hypotenuse

The hypotenuse is always opposite the right angle.

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

The sum of the squares of the two legs equals the square of the hypotenuse.

3. 5

$$3^2 + 4^2 = 9 + 16 = 25. c = \sqrt{25} = 5.$$

4. 13

$$5^2 + 12^2 = 25 + 144 = 169. c = \sqrt{169} = 13.$$

5. 10

$$6^2 + 8^2 = 36 + 64 = 100. c = \sqrt{100} = 10.$$

6. 8

$$b^2 = c^2 - a^2 = 100 - 36 = 64. b = 8.$$

7. 12

$$b^2 = 169 - 25 = 144. b = 12.$$

8. Yes: $3^2 + 4^2 = 9 + 16 = 25 = 5^2$

Check if $a^2 + b^2 = c^2$. $9 + 16 = 25$ ✓

9. Yes: $5^2 + 12^2 = 25 + 144 = 169 = 13^2$

$$25 + 144 = 169 = 13^2 \checkmark$$

10. 15

$$9^2 + 12^2 = 81 + 144 = 225. \sqrt{225} = 15.$$

11. 90° (right angle)

A right triangle is defined by having exactly one 90° angle.

12. 15

$$b^2 = 17^2 - 8^2 = 289 - 64 = 225. b = 15.$$
