What is the Pythagorean Theorem?

Worksheet

The Pythagorean theorem states a + b = c, where a and b are the legs of a right triangle and c is the hypotenuse (the side opposite the right angle).

a^2 + b^2 = c^2

Questions

1. Legs 6 and 8 - what is the hypotenuse?

A) 10
B) 14
C) 12
D) 48

2. The Pythagorean theorem applies to:

A) Any triangle
B) Only right triangles
C) Only equilateral triangles
D) Only obtuse triangles

3. Hypotenuse = 13, leg = 12. Other leg?

A) 1
B) 5
C) 7
D) 25

4. Which side is always the longest in a right triangle?

A) Either leg
B) The hypotenuse
C) Depends on the triangle
D) They're always equal

5. A right triangle has legs 3 and 4. Find the hypotenuse.

6. A ladder leans against a wall, reaching 8 m up while its base is 6 m from the wall. How long is the ladder?

7. A right triangle has hypotenuse 13 and one leg 5. Find the other leg.

8. Define: What is the Pythagorean theorem?

9. Define: Which side is the hypotenuse?

10. Define: Name a common Pythagorean triple.

Answer Key

1. A) 10 - 6+8=36+64=100, 100=10.
2. B) Only right triangles - It only holds when there is a 90 angle.
3. B) 5 - 12+b=13 144+b=169 b=25 b=5.
4. B) The hypotenuse - The hypotenuse is opposite the right angle and always the longest side.
5. a + b = c 3 + 4 = 9 + 16 = 25 c = 25 = 5
6. a = 6, b = 8 c = 6 + 8 = 36 + 64 = 100 c = 100 = 10 m
7. a + b = c 5 + b = 13 25 + b = 169 b = 144 b = 12
8. a + b = c - the sum of the squares of a right triangle's legs equals the square of the hypotenuse.
9. The longest side, always opposite the right angle.
10. 3-4-5 (and its multiples like 6-8-10).