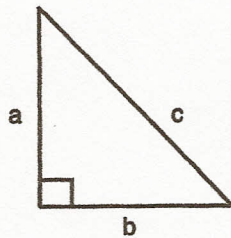


PT-2 The Pythagorean Theorem

The Pythagorean Theorem is a famous theorem in geometry. It is named after Pythagoras, the Greek philosopher and mathematician who lived in the 6th century B.C. The theorem describes a special relationship between the legs and hypotenuse of a right triangle and states that $a^2 + b^2 = c^2$. a and b represent the lengths of the legs of the triangle and c represents the hypotenuse.

In any right triangle, the *hypotenuse* is the side opposite the right angle. It is also the longest side. The *legs* are the other two sides. See the figure below.



a and b are the legs
 c is the hypotenuse

Find the lengths of the missing sides of the right triangles below.

1. $b = 8$, $c = 10$
2. $b = 36$, $c = 45$
3. $a = 20$, $c = 29$
4. $a = 18$, $b = 24$
5. $b = 80$, $c = 82$
6. $b = 45$, $c = 51$
7. $a = 9$, $b = 12$
8. $b = 35$, $c = 37$
9. $b = 4$, $c = 5$
10. $b = 40$, $c = 41$