

The Pythagorean Theorem

Name: _____

Assesses the following learning goals:

24. Explain a proof of the Pythagorean Theorem and its converse

25. Use the Pythagorean Theorem to determine unknown side lengths in right triangles, including those found in two and three dimensional figures.

Determine if each set of numbers are sides of a right triangle. Show all work.

1. $a = 10$
 $b = 4$
 $c = 16$

5. $a = 84$
 $b = 112$
 $c = 140$

2. $a = 9$
 $b = 4$
 $c = 15$

6. $a = 24$
 $b = 32$
 $c = 44$

3. $a = 12$
 $b = 35$
 $c = 37$

7. $a = 65$
 $b = 72$
 $c = 97$

4. $a = 8$
 $b = 13$
 $c = 22$

8. $a = 16$
 $b = 63$
 $c = 65$

Each set of numbers represents the sides of a right triangle. Find the missing sides. If any sides are not whole numbers, estimate them to the nearest tenth.

1. $a = 7$
 $b = 5$
 $c = ?$

4. $a = 9$
 $b = 15$
 $c = ?$

2. $a = 44$
 $b = ?$
 $c = 125$

5. $a = 48$
 $b = 53$
 $c = ?$

3. $a = ?$
 $b = 21$
 $c = 29$

6. $a = ?$
 $b = 49$
 $c = 64$