Name: _____

The Pythagorean Theorem and Its Converse

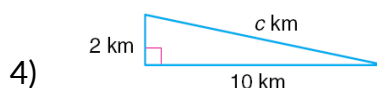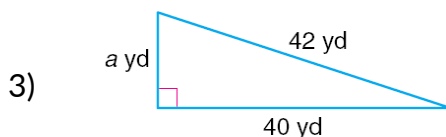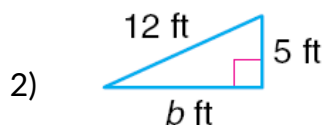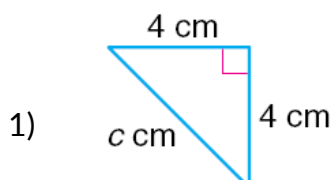1) If c is the measure of the hypotenuse and a and b are the measures of the legs, find each missing measure. Round to the nearest tenth if necessary.

1)

4 cm
4 cm
c cm

2)

12 ft
5 ft
b ft

3)

42 yd
a yd
40 yd

4)

c km
2 km
10 km

5)

3 in.
7 in.
c in.

6)

b in.
18 in.
12 in.
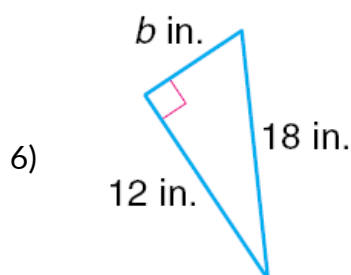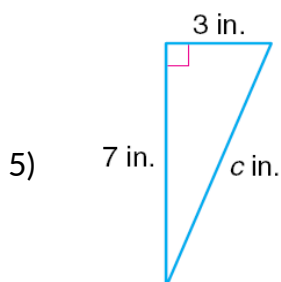
2) State whether or not the given triple is a Pythagorean Triple. Give a reason for your answer.

1) (8, 15, 17)

2) (7, 24, 25)

3) (8, 9, 17)

4) (4, 9, 13)

5) (12, 35, 37)

6) (12, 17, 29)

7) (11, 17, 28)

8) (11, 60, 61)

3) One leg of a right triangle is 3 feet longer than 3 times the length of the first leg. The length of the hypotenuse is 25 feet. Find the lengths of the legs.

4) The legs of a right triangle are consecutive positive integers. The hypotenuse has length 5. What are the lengths of the legs?

5) The legs of a right triangle are consecutive even integers. The hypotenuse has length 10. What are the lengths of the legs?

6) One leg of a right triangle is 1 centimeter less than twice the length of the first leg. If the length of the hypotenuse is 17 centimeters, find the lengths of the legs.

7) Fritz and Greta are planting a 12- foot by 18-foot rectangular garden, and are laying it out using string. They would like to know the length of a diagonal to make sure that right angles are formed. Find the length of a diagonal.

8) The base of a 36-foot long guy wire is located 16 feet from the base of the telephone pole that it is anchoring. How high up the pole does the guy wire reach?