Name _____ Date _____

Pythagorean Theorem Proofs and its Converse – Homework 2

Example: A garden is in the shape of a triangle and has sides with the lengths of 5 kilometers, 8 kilometers and 14 kilometers. Find out if it is a right triangle?

Step 1: In a right triangle, $a^2 + b^2 = c^2$, where a and b are the lengths of the legs and c is the length of the hypotenuse. This is called the Pythagorean Theorem.

Step 2: Plug in 5, 8 and 14 into the Pythagorean Theorem. Use the smaller numbers (5, 8) for a and b and the largest number (14) for c.

Step 3: $a^2 + b^2 = c^2$
$5^2 + 8^2 = 14^2$
$25 + 64 = 196$
$89 = 196$

Answer: This is false; it's not a right triangle.

Complete the following problems:

1. Town B is 10 miles north and 15 miles east of town A. How far are the two towns apart?

2. A pond is triangular shaped and has sides with lengths of 6 kilometers, 8 kilometers and 10 kilometers. Find out if it is a right triangle.

3. A triangle shaped cloth has sides with lengths of 12 inches, 5 inches and 13 inches. Is it a right triangle?

4. The area of a school's grounds is triangle shaped and has sides with lengths of 2 kilometers, 4 kilometers and 6 kilometers. Find out if it is a right triangle.