**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per.\_\_\_\_\_\_\_**

### U10 CWK #1 *A Proof of the Pythagorean Theorem*

Find the area of the shape below. Show your method/thinking on the graph and in your work. Each square on the grid has a side length of 1 unit.

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In problems 1 and 2 below, a right triangle is shown in gray. The shorter sides of a right triangle are referred to as **legs**. The longer side of the right triangle (the side opposite of the right angle) is called the **hypotenuse**. Squares have been drawn adjacent to the sides of the right triangle.

**Directions:** Find the area of each of the squares. Assuming each square on the grid has a side length of 1 unit. Write the areas inside each of the squares.

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* 1. What do you notice about the relationship between the areas of the squares formed adjacent to the legs of a right triangle?
  2. Write an **equation** that shows the relationship between the side lengths of a right triangle using *a* and *b* for the lengths of the legs and *c* for the length of the hypotenuse.

**Directions:** In each of the problems below, a right triangle is shown in gray. The squares along each of the three sides of the triangles have been drawn. The area of two of the squares is given.

**Directions:**

1. Determine the area of the third square. Write your answer in the square.
2. Find the side length all 3 squares, write the sides lengths below each picture.

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