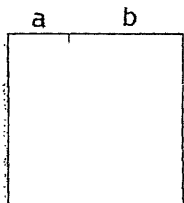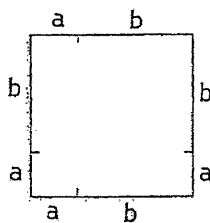# The Pythagorean Theorem Task   Aug 11, 2015 (Tues)
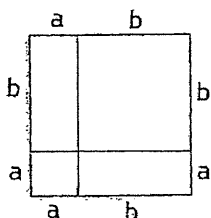
Step 1: On a piece of tracing paper, mark one side *a* and one side *b* as shown. Use ruler to measure a length of **a (short)** and **b (long)**.
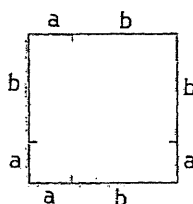

Step 2: Copy these measures on each of the other sides.


**Step 3:** Fold the paper into four sections and label the area of each section.

Step 4: On **ANOTHER** piece of tracing paper, mark *a* and *b* the same lengths as your first tracing paper. (Note that the order of a and b are different from the first tracing paper)

Step 5: Connect the marks using a straightedge. Let *c* represent the length of each hypotenuse. Check the lengths of each *c*. What do you notice?
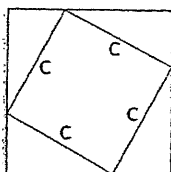
Step 6: Label the area of each triangle and the square in the middle.
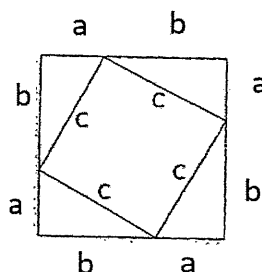
Conclusion: Place your two tracing papers side-by-side. On the first tracing paper, color one of the **RECTANGLES** (not squares) one color. What pieces on the second tracing paper, if you put them together, would equal the area of the rectangle you colored? Color them the same color. Repeat that process with the second rectangle.
What pieces are left over? What can we say about their areas?

1. Use a ruler to measure *a*, *b*, and *c*. Do these measures confirm $a^2 + b^2 = c^2$?
2. Compare your lengths *a* and *b* with the other pair in your group. Did you arrive at the same conclusion?

Challenge: Explain why the diagram below is an illustration of the Pythagorean Theorem?