

Pythagorean Theorem Investigation

Pythagoras was a Greek mathematician who lived about 2,500 years ago. He made many mathematical discoveries. One of his most famous discoveries was about certain kinds of triangles.

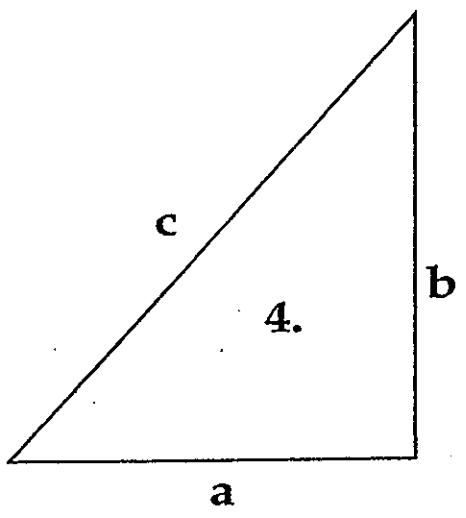
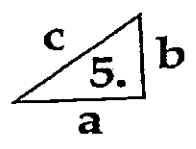
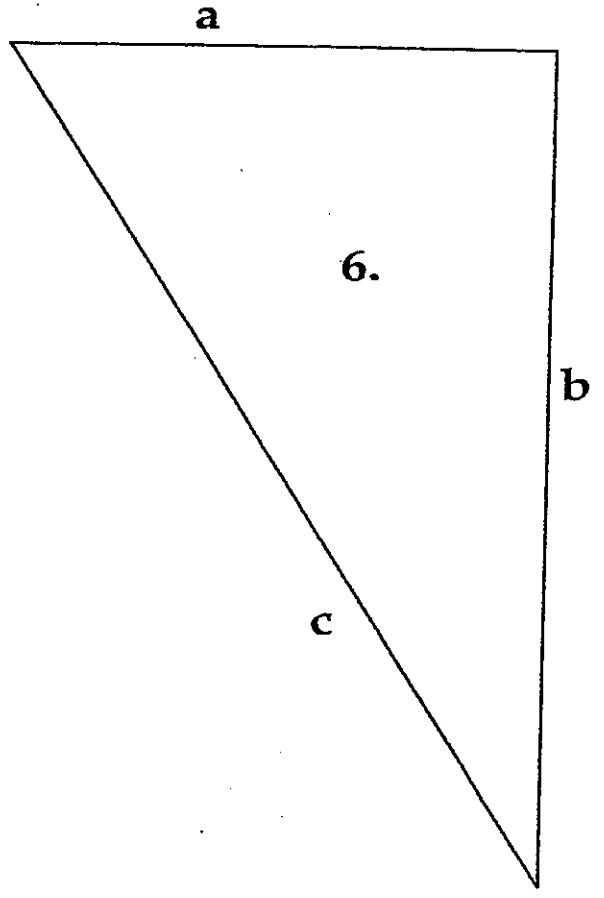
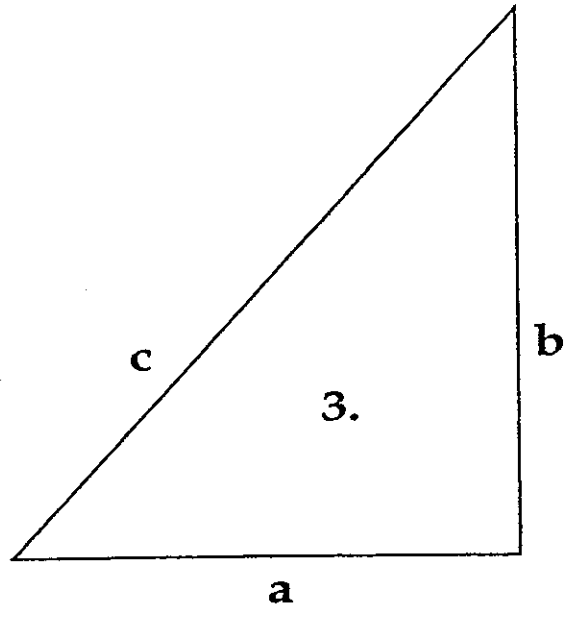
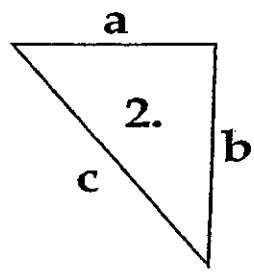
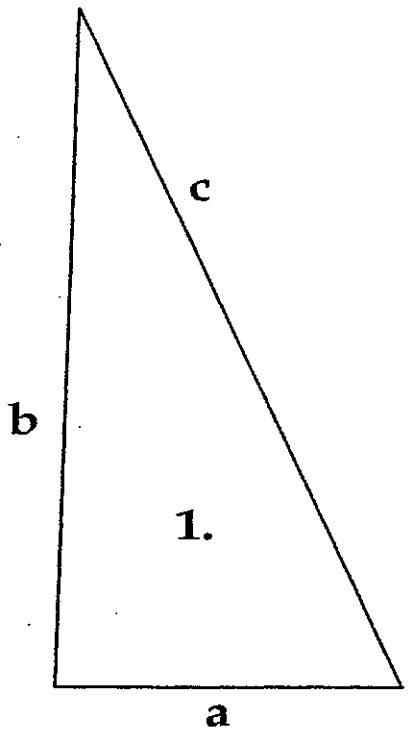
Method #1:

Study the triangles on the next page and complete the following:

1. Measure the sides of each triangle to the nearest half centimeter.
Place your measurements in the left part of this table:

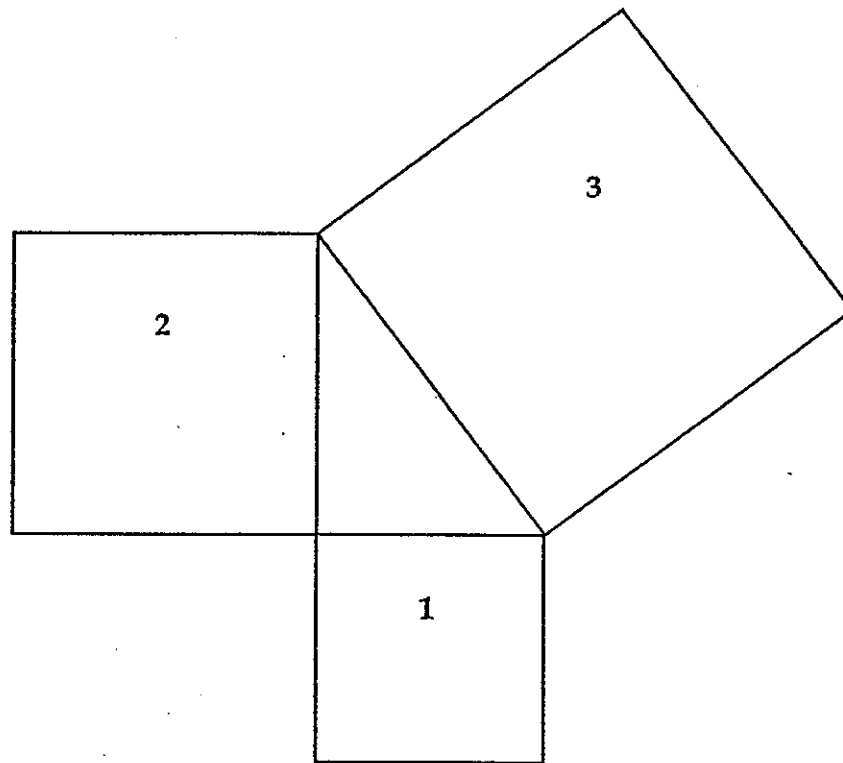
Triangle	a	b	c	a^2	b^2	c^2
1						
2						
3						
4						
5						
6						

2. Make the computations necessary to complete the right side of the table.
3. Study the results in the right side of the table. Talk about any observations you've made.

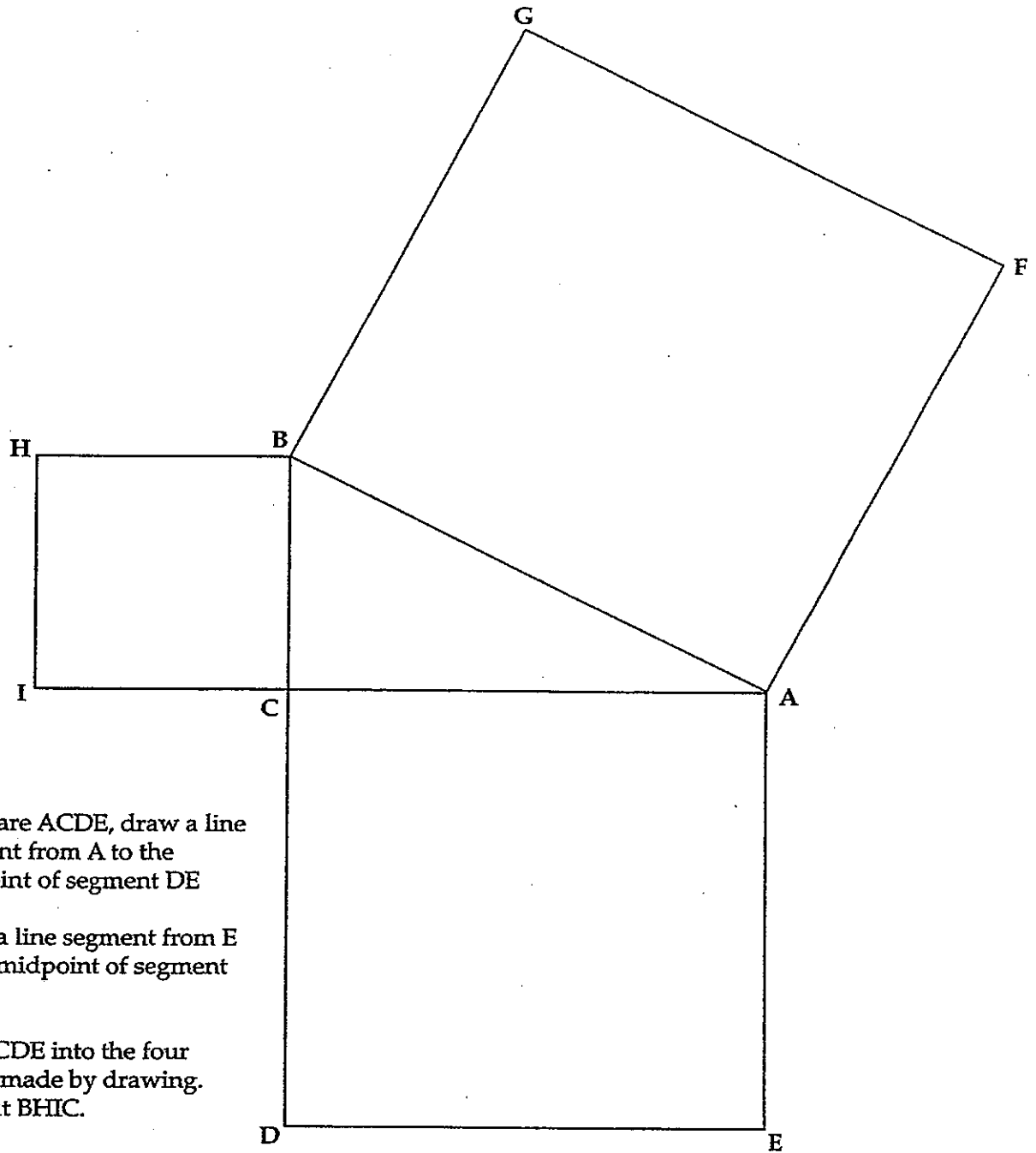


Method #2—Cuisenaire Rods:

1. Cover square #1 below using only one color of the Cuisenaire rods.
2. Cover square #2 below using only one color of the Cuisenaire rods.
3. Take the Cuisenaire rods used so far and fit them into square #3 (exchanges may be made).
4. Talk about what you observe.

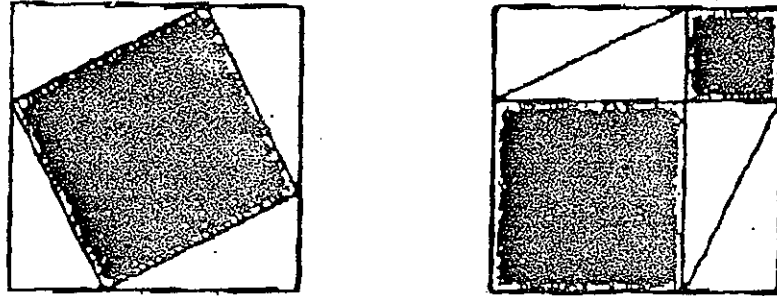


Method #3:



1. In square ACDE, draw a line segment from A to the midpoint of segment DE
2. Draw a line segment from E to the midpoint of segment CD.
3. Cut ACDE into the four pieces made by drawing. Cut out BHIC.
4. Fit all five pieces into FGBA.
5. Talk to your partner about what you observe.

PYTHAGOREAN THEOREM



The first figure consists of four identical right triangles and a square.

1. On which side of the triangles is the square drawn?

The second figure consists of four triangles identical with those in the first figure and two squares.

2. On which sides of the triangles are these squares drawn?
3. Given that the two figures have the same area, explain why it follows that the large square must be equal in area to the other two squares put together.