PART II – In this part of the investigation you will look for a relationship among the areas of squares drawn on the sides of right triangles.

For each row on the table below, create the triangle on the Geoboard. Then create a square on each side of the triangle. Fill out the following table.

Length of Leg 1	Length of Leg 2	Area of the square on Leg 1	Area of the square on Leg 2	Area of the square on hypotenuse	length of hypotenuse
1	1	1	1	2	$\sqrt{2}$
1	2	1	4	5	$\sqrt{5}$
2	2	4	4	8	$\sqrt{8}$
1	3	1	9	10	$\sqrt{10}$
2	3	4	9	13	$\sqrt{13}$
3	3	9	9	18	$\sqrt{18}$
3	4	9	16	25	$\sqrt{25} = 5$

Follow-up: discuss with your partner.

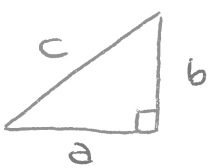
1. Look for a pattern in the relationship among the areas of the three squares drawn for each triangle. Use the pattern and make a conjecture about the relationships among the areas.

Area of square on Leg 1 + Area of square on Leg 2 = Area of Square on Hypotenuse

2. In the extra column on the table, record the length of the hypotenuse of each triangle using the $\sqrt{\ }$ symbol.

(see above)

3. The pattern you discovered is a famous theorem named after the Greek mathematician, Pythagoras. State this relationship as a general rule for any right triangle with legs of lengths *a* and *b* and a hypotenuse of length *c*.



Area of square w/ length a is a^2

$$a^2 + b^2 = c^2$$