**8-6 The Pythagorean Theorem**

*Important Terms:*

Hypotenuse-

Legs-

Right Angle

*Class Activity: (see worksheet)*

***Discoveries:***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Leg A  Area/Length | Leg B  Area/Length | Hypotenuse (C)  Area/Length | Sum of Leg A and Leg B’s squares. |
| Triangle 1 |  |  |  |  |
| Triangle 2 |  |  |  |  |
| Triangle 3 |  |  |  |  |

***Results:***

What did you notice about the length of the legs? How does this help you find the length of the hypotenuse?

What did you notice about the sum of the areas of the squares of both legs?

***Rule for finding the length of one side of a right triangle:***

Do you think the Pythagorean Theorem is true for all right triangles even if the sides are not whole numbers? Explain your answer.

Does the Pythagorean Theorem hold true if the triangle is not a right triangle?

1. Are the following triangles right triangles? Explain your answer.

a. 8 cm, 10 cm, 12 cm

b. 8 in, 9 in, 10 in

2. Use the Pythagorean Theorem to find the length of the hypotenuse when Leg A = 8 cm and Leg B = 15cm.

3. Use the Pythagorean Theorem to find the length of the missing leg when Leg A = 12 in and Hypotenuse = 20 in.

4. Use the Pythagorean Theorem to find the length of the missing leg when Leg B = 8 m and Hypotenuse = 10 m.