**Vocabulary and Symbols**

*Describe the following geometry words in your own words. Draw the symbol if there is one associated with it.*

**Triangle:**

**Right Triangle:**

**Legs of a Triangle:**

**Hypotenuse of a Triangle:**

**Angle:**

**Square Root:**

**Name:** **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Pythagorean**

**Theorem**

*On the lines below, record the vocabulary terms for each side. Then, using a, b, and c, label each side of the triangle in the boxes below.*

**REFLECT:**What is the relationship among ?

**CREATE:**

Using , write an equation to describe the mathematical relationship for Pythagorean theorem.

**Am I Right?**

*Determine whether each of the following problems below are right triangles using the Pythagorean rule.*

1. Do these three sides construct a right triangle?

= 6 ft = \_\_\_\_\_\_\_\_

= 8 ft = \_\_\_\_\_\_\_\_

= 10 ft = \_\_\_\_\_\_\_\_

1. Do these three lengths form a right triangle?
= 7 cm = \_\_\_\_\_\_\_\_

= 8 cm = \_\_\_\_\_\_\_\_

= 12 cm = \_\_\_\_\_\_\_\_

1. Do these three sides create a right triangle?

= 5 in = \_\_\_\_\_\_\_\_

= 12 in = \_\_\_\_\_\_\_\_

= 13 in = \_\_\_\_\_\_\_\_

1. Do these three lengths make a right triangle?

= 9 m = \_\_\_\_\_\_\_\_

= 12 m = \_\_\_\_\_\_\_\_

= 15 m = \_\_\_\_\_\_\_\_

**WRITE, PAIR, SHARE:**

What does it mean when ?

**What’s My Hypotenuse?**

*Use a calculator and the formula to find the length of each missing hypotenuse.*

**TURN & TALK:**
*What relationships do you notice between the side lengths of the Cheez-Its® triangle and questions 1 and 4?*

1. = \_\_\_\_\_\_\_\_

 = ? m

 = 12 m

 = 35 m

Set up the equation:

If = 12 m, = \_\_\_\_\_\_\_\_

If = 35 m, = \_\_\_\_\_\_\_\_

Now, \_\_\_\_\_\_\_\_

So, = \_\_\_\_\_\_\_\_

If we know the value of , we can use the square root to find .

 = \_\_\_\_\_\_\_\_ and this is the value of .

**WRITE, PAIR, SHARE:**

*Can the hypotenuse or a leg be a decimal? Why or why not?*

1. Using the measurements of the right triangle below, determine the following:

 = 6 ft

 = 4 ft

 = ? ft

= \_\_\_\_\_\_\_\_

 = \_\_\_\_\_\_\_\_

 = \_\_\_\_\_\_\_\_

= \_\_\_\_\_\_\_\_

**What’s My Leg Length?**

**WRITE, PAIR, SHARE:**

*Using what you know about solving equations and the right triangle below, how would you find the missing leg of a right triangle?*

*Record your hypothesis in the box:*

 = 35 m

 = 28 m

 = ? m

*Check your understanding by solving for the missing leg of the same right triangle above.*

1. Solve for the missing leg.

Set up the equation:

= \_\_\_\_\_\_\_\_

 = \_\_\_\_\_\_\_\_

Now, substitute the known values,

 \_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_

Solve for by isolating the variable, .

Then find the square root of and this is the value of .

1. Solve for the missing leg of the right triangle:

 = 10 cm

 = 13 cm

 = ? cm

= \_\_\_\_\_\_\_\_