MFM2PI – *Unit 4: Similar Triangles – Lesson 1*  Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Triangles and Similarity**

1. **Characteristics of Triangles**

Let’s begin with a quick review of the characteristics of triangles!

A triangle is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A triangle has \_\_\_\_\_\_\_\_\_\_\_\_\_ sides and \_\_\_\_\_\_\_\_\_\_\_\_\_ angles.

The sum of the interior angles of a triangle is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

***How to Label a Triangle:***

i) Each angle gets a capital letter  ***(eg. “A”)***

ii) The side opposite each angle gets the
 lower case *same* letter ***(eg. “a”)***

***Three Types of Triangles, as determined by angles!***

*Triangle #1: Triangle #2: Triangle #3:*

*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

­

- **all** interior angles are - **one** interior angle is - **one** interior angle is
 **less than** 90° **equal** to 90° **greater than** 90°

1. **What is “Similarity”?**

Great question! For one figure to be similar to another, they must have the same shape (*they must look like each other*), but not necessarily be the same size (*one could be bigger or smaller than the other*).

When we’re talking about triangles, we can be even more specific:

***Two Triangles are Similar if …***

1.
2.

***The Visual***

**F**

**D**

**E**

**G**

**H**

**A**

**B**

**C**

1. **How to Determine and State Similarity**

In conclusion, we can determine the similarity of any two triangles by examining

a) *their angles*, and
b) *the ratio of their comparable side lengths*

**I**

This raises an interesting point: when naming a triangle, the order of the letters is important!
Basically, the **order of the letters** is your **road map** around the outside of the triangle:
*where to start*, *where to go next*, and *where to end*.

So, let’s create a similarity statement for our three triangles above!

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ~ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ~ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

We can express the relationships between the sides of our triangles as well!

***Remember****: letter order is important!*

a)  b)  c)  d) 

e)  f)  g)  h) 

**HW: *None tonight! Just complete this side of the note!***