Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

CC GEOMETRY TROICI

**MINI-LESSON #3: TRIANGLES**

**TOPIC 1: PYTHAGOREAN THEOREM**

* Only used in \_\_\_\_\_\_\_\_\_\_\_\_\_ triangles!
* The hypotenuse must always be the \_\_\_\_\_\_\_\_\_ value.

**TOPIC 2: EXTERIOR ANGLES OF TRIANGLES**



$$Exterior Angle=Sum of Two Non-Adjacent Interior Angles$$

**TOPIC 3: ISOSCELES TRIANGLES**

* Base angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Two sides are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**TOPIC 4: MIDSEGMENTS OF TRIANGLES**

* The midsegment is created by connecting two

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of opposite sides in a triangle.

* The midsegment is exactly \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the

 opposite side.

* The midsegment is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the opposite side.

**TOPIC 5: CONGRUENT TRIANGLES**

**5 METHODS TO PROVE TRIANGLES CONGRUENT**

* In congruent triangles all sides of one triangle are \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to all the sides of another triangle
* In congruent triangles all angles of one triangle are \_\_\_\_\_\_\_\_\_\_\_\_\_ to all the angles of another triangle.
* You only need 3 pieces of information to prove that all the sides and angles of a triangle are congruent. The 3 variations are our ***triangle congruence*** postulates listed below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SSS** | **SAS** | **ASA** | **AAS** | **HL** |
| Image result for sss triangle | Image result for sas triangle | Image result for asa triangle | Image result for aas triangle | Image result for HL triangle |

**METHODS YOU *CANNOT* USE TO PROVE TRIANGLES CONGRUENT**

|  |  |
| --- | --- |
| **SSA** | **AAA** |
| Image result for SSA triangleImage result for SSA triangle | Image result for AAA triangle |

**TOPIC 6: SIMILAR TRIANGLES**

**3 METHODS TO PROVE TRIANGLES ARE SIMILAR**

* When two triangles are similar they are the same \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ but different \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Angles of similar triangles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* \*Sides of similar triangles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.\* (**NOT CONGRUENT**!)
* Sides of similar triangles will share the same \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Scale factors when a triangle goes from small to big are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Scale factors when a triangle goes from big to small are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* You can prove triangles are similar by proving angles are congruent or if the sides share the same ratio. These are our ***similarity postulates*** listed below:

|  |  |  |
| --- | --- | --- |
| **AA**$≅$ | **SAS**$\~$ | **SSS**$\~$ |
| *Image result for AA similarity triangle* | Image result for SAS similarity triangle | Image result for SSS similarity triangle |