Math 3 8.5 Similar Polygons Unit 8

*SWBAT prove similarity between geometric figures.*

***Similar Figures:*** figures that have the same shape but not necessarily the same size. \_\_\_\_\_\_\_\_\_ is the symbol.

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| Similar Polygons | Two polygons are similar polygons if corresponding angles are congruent and if the lengths of the corresponding sides are proportional. |  |  |



**Example 1:** ∆MNP ~ ∆SRT

1. What are the pairs of congruent angles?
2. Write the proportion for the ratios of the corresponding sides.

**Example 2:** Determining whether the polygons are similar. If they are, write a similarity statement and give the scale factor.

1. JKLM and TUVW
2. ∆ABC and ∆EFD

**Example 3:** ABCD ~ EFGD.

1. What is the value of x?
2. What is the value of y?

Math 3 8.5 Proving Triangles Similar Unit 8

*SWBAT prove similarity between triangles using a two-column proof.*

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| AA $∼$ | SAS $∼$ | SSS$∼$ |
| If two angles of one triangle are congruent to two angles of another triangle, then the triangles are similar. | If an angle of one triangle is congruent to an angle of a second triangle, and the sides that include the two angels are proportional, then the triangles are similar. | If the corresponding sides of two triangles are proportional, then the triangles are similar. |

**Example 4:** Are the two triangles similar? How do you know?

1. 
2.

**Example 5:** Are the two triangles similar? If so, write a similarity statement.

1. 
2. 

**Example 6:** Given: $\overbar{FG}≅\overbar{GH}, \overbar{JK}≅\overbar{KL}, ∡F≅∡J$

 Prove: ∆FGH ~ ∆JKL

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| --- | --- |
| **Statement** | **Reason** |
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**Example 7:** Before rock climbing, Darius wants to know how high he will climb. He places a mirror on the ground and walks backward until he can see the top of the cliff in the mirror. What is the height of the cliff?