SECTION 7-3: *Similar Triangles* Name: _____ Date:_____

Investigation 1: Is AA a Similarity Shortcut?

1. Draw any triangle ABC.

2. Construct a second triangle, DEF; with $< D \cong < A \text{ and } < E \cong < B$. What will be true about $< C \text{ and } < F$? Why?

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3. Carefully measure the lengths of the sides of both triangles. Compare the ratios of the corresponding sides. Is $\frac{AB}{DE} \approx \frac{AC}{DF} \approx \frac{BC}{EF}$?

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4. Compare your results with the results of others near you. State your findings as a conjecture:

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5. What theorem can be used to help prove your conjecture above? Explain.

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6. What similarity shortcuts do we not have to investigate? Why?

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Investigation 2: *Is SSS a similarity Shortcut?*

1. Draw any triangle ABC.

2. Construct a second triangle, DEF, Whose side length are a multiple of the original triangle.
3. Compare the corresponding angles of the two triangles.
4. Compare your results with the results of others near you and state a conjecture.

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Investigation 3: *Is SAS a Similarity Shortcut?*

1. Construct two different triangles that have two pairs of sides proportional and pair of included angles equal in measure. *(You may use ΔABC from investigation #2, just construct a new ΔDEF*)

2. Compare the measures of corresponding sides and corresponding angles.
3. Share your results with others near you and state a conjecture

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