**Advanced Geometry: Similarity Project**

This project has two parts. First, you will draw a similar image of a picture by enlarging it. Second, you will write a short report on creating similar figures.

**Part 1: Draw a Similar Image**

Choose a picture or cartoon to enlarge. Using a 4-quadrant coordinate system, write a rule that would produce a similar image. Your scale factor must be at least 3 and no larger than 5. You can challenge yourself by picking a scale factor that isn’t an integer. Your final poster must include the following:

1. Show the original picture and the image, colored on a coordinate system.
2. Identify the scale factor and the transforming rule.
3. Show the coordinates of the original and the image.
4. Measure several corresponding parts of your original and image. Include:
   1. At least 2 pairs of angles
   2. At least 2 pairs of lengths
   3. At least 2 pairs of areas

**Part 2: Short Report**

Write a short report to attach to your poster that demonstrates your knowledge of similarity. Include the following:

1. How angles in your enlargement changed from original to image. Be specific, and give examples from Part 1. Tell how this change is related to your scale factor.
2. How lengths of line segments in your enlargement changed from original to image. Be specific and give examples from Part 1.
3. How area in your enlargement changed from original to image. Be specific, and give examples from Part 1.

**Requirements for Poster - Checklist**

Your poster must include the following items to get full credit:

 An original figure, titled “original” and colored, on a coordinate system. This figure must have significant coordinate points labeled with capital letters at a minimum of 15 locations.

 An enlargement figure, titled “image” and colored, on a second coordinate system. This figure must also have points labeled with capital letters prime (Ex: A’ ) at the same locations as the original.

 A table of points for the original and the image. You may make these separately, or combine them into a single table. Make sure you have column headings.

 The scale factor must be clearly visible.

 The rule for the transformation must be clearly visible.

 At least two pairs of corresponding lengths identified on each figure. Label these lengths with a description (such as “length of nose”) and a measurement in cm.

 At least two pairs of corresponding angles identified on each figure. Label these angles with a description (such as “angle of elbow”) and a measurement in degrees.

 At least two pairs of corresponding areas identified on each figure. Label these areas with a description (such as “area of tooth”) and a measurement in cm².

 Your short report as described on the previous page.

 Some sort of title.

 Your name!