

**Oscar Smith High School
Pre-IB Geometry 9
Summer Assignment 2011**

Introduction: The Pre-IB Geometry course surpasses the regular geometry course requirements, examining the Virginia Geometry Standards of Learning in more depth. A great deal of time is spent developing analytical thinking skills along with conceptual development. This class provides the pre-requisites for Pre-IB Algebra 2 with Trigonometry.

Purpose: The purpose of this assignment is to demonstrate the connections that exist between Algebra 1 and Geometry. Students will apply their previous knowledge of math concepts to geometry problems. Pre-IB Geometry teachers often expect students to make these types of associations.

Directions: This assignment covers the topics listed below, all of which are from your earlier math courses. Several are from Algebra 1, although some may be from even earlier coursework. You will want to spend some time reviewing this material before you complete the assignment. You are welcome to use any reference materials to which you have access. The Internet, old math notes, old textbooks, encyclopedias, dictionaries, etc. are all excellent resources. I have listed a few Web sites alongside the review topics, however, this is not meant to be a comprehensive list. They are just a few site I found with a quick search. You may have to do some research of your own as well!

TOPICS COVERED IN THE ASSIGNMENT:

1. Graphing points on the coordinate plane:

<http://www.math.com/school/subject2/lessons/S2U4L1GL.html>

2. Slope of a Line:

<http://www.math.com/school/subject2/lessons/S2U4L2GL.html>

3. Parallel and Perpendicular Lines (including the relationship between their slopes):

http://www.algebralab.org/lessons/lesson.aspx?file=Geometry_CoordParallelPerpendicular.xml

4. Writing the Equation of a Line:

http://www.algebralab.org/lessons/lesson.aspx?file=Algebra_LinearEqEquationsOfLines.xml

5. Types of Triangles:

<http://www.math.com/school/subject3/lessons/S3U2L2DP.html>

6. Congruent Figures:

<http://www.math.com/school/subject3/lessons/S3U3L1GL.html>

7. Transformations:

<http://www.mathsnet.net/transformations/index.html>

Due Date: Please show your work on a separate sheet of paper. The assignment, graph paper and your work should all be fastened together and returned to the main office at Oscar Smith High School by **Monday, August 22, 2011**.

Contact: If you have any questions, please feel free to contact me: Lynn.Wasinger@cpschools.com. Enjoy your summer and I look forward to meeting you all in the fall.

Mrs. Wasinger ☺

SUPPLY LIST:

3-ring binder

Spiral bound notecards

Loose-leaf paper

Pencils

**** Graphing calculators may be borrowed from the school, if needed.**

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Name: _____ Score: _____

1. Use a ruler to draw a coordinate plane on a piece of paper. Label the x and y axes. Draw and label the points A (-6, 4), B (6,10) and C (10,4). Use a ruler to connect the points forming triangle ABC.
2. Find the slope (m) for the segments which form the sides of a triangle. PLEASE SHOW ALL WORK.

$$m_{AB} = \underline{\hspace{2cm}}$$

$$m_{BC} = \underline{\hspace{2cm}}$$

$$m_{AC} = \underline{\hspace{2cm}}$$

3. Use the information from 1 and 2 to write the equations for the lines that contain the sides of triangle ABC. Be sure to show all work and write the equation in the form of $y = mx + b$.

Line AB: _____

Line BC: _____

Line AC: _____

4. Using the information obtained in 2, determine the SLOPE of lines that are parallel and perpendicular to the sides of the triangle.

Slope parallel to line AB: _____ perpendicular: _____

Slope parallel to line BC: _____ perpendicular: _____

Slope parallel to line AC: _____ perpendicular: _____

5. Plot point D (-6, -4) and E (10, -4). If F is in quadrant IV, what are its exact coordinates so that triangle ABC and triangle DEF are congruent?

6. If triangle ABC is moved to triangle DEF, which transformation occurred?

7. If the entire triangle ABC is moved 7 units to the right and 4 units up, what are the new coordinates for A, B and C? In which quadrant is the new triangle?

8. Using the appearance of the triangle (you can use a ruler and a protractor to verify measurements), classify triangle ABC. Be certain to list all that apply (scalene, isosceles, acute, etc.)
