ALGEBRA I: CCSS COVER SHEET

CCSS Standard(s): G-GPE.7 Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g. using the distance formula.

Title of Activity: Area and Perimeter on a Coordinate System

Suggested Days to Complete: 2 Days

Brief description of Activity: *(Include any steps involving the calculator.)*

Introduce the Distance Formula and explain what each variable in the formula represents.
Model a few problems as guided practice showing the students how to correctly substitute coordinate values into the formula and then allow the students to independently use the formula to find the distance between two points.
Review the concept of perimeter and area formulas of certain polygons such as triangle and rectangle.
Begin with finding the perimeter of a figure reminding them that the length of each side can be found using the distance formula since it is the distance between the two endpoints. After the lengths of all sides are calculated, students will add all sides together to calculate the perimeter.
Review the formulas for areas of Triangle and Rectangle and also explain where the height is found on a triangle.
Using the distance formula, the students will determine the lengths needed to substitute in the formula i.e. length and width of a rectangle and height and base of a triangle. Substitute these lengths in their formulas to calculate the area of the figures.

Teacher Resources/Materials/Websites:

Graph Paper / Calculators / Rulers / Geometry workbook for various examples

Formative Assessment(s):

In partners, students will research another polygon assigned to each group to find the formula(s) needed for the perimeter and area. Each pair will create their own problem by graphing the polygon, identify the coordinates and calculating the lengths of the needed sides or heights in order to solve for the perimeter and area. Each pair will explain their procedure in written and verbal form and share with the rest of the class.

**Optional—include suggestions if these CCSS connections can be made.*

*Writing Connection: Each pair will write an explanation of their procedure used to graph and solve for the perimeter and area.

*Technology: Use of the calculator will be the technology used.

Area and Perimeter on a Coordinate Plane

Use the following space to show your work and record your answers.

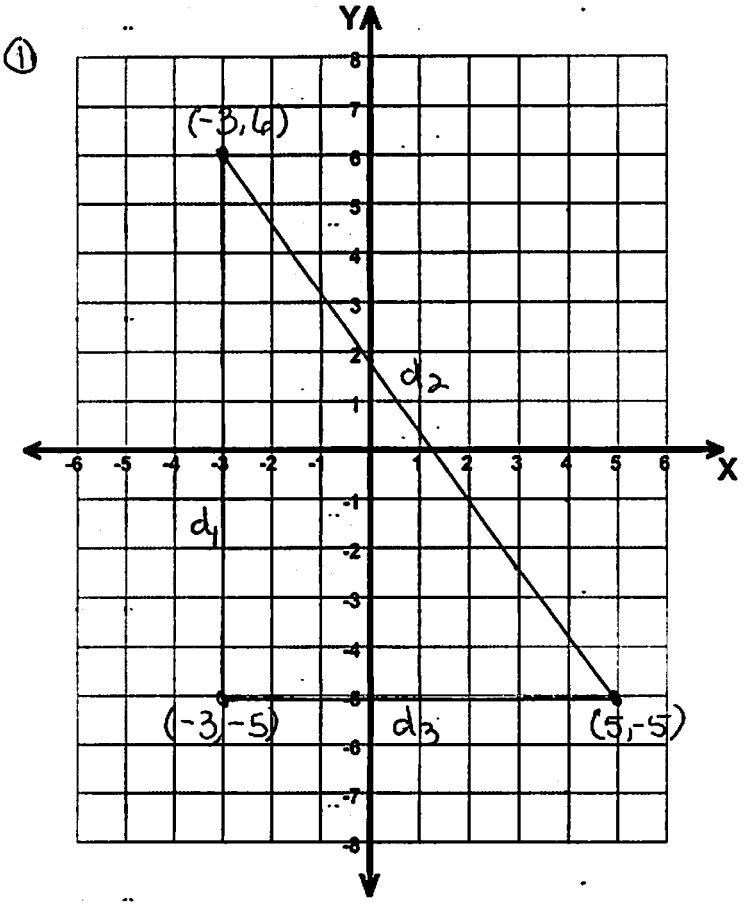
1. d_1 = _____ d_2 = _____ d_3 = _____
   P = _____ A = _____

2. d_1 = _____ d_2 = _____ d_3 = _____ d_4 = _____
   P = _____ A = _____

3. d_1 = _____ d_2 = _____ d_3 = _____ d_4 = _____
   P = _____ A = _____

4. d_1 = _____ d_2 = _____ d_3 = _____
   P = _____ A = _____

①



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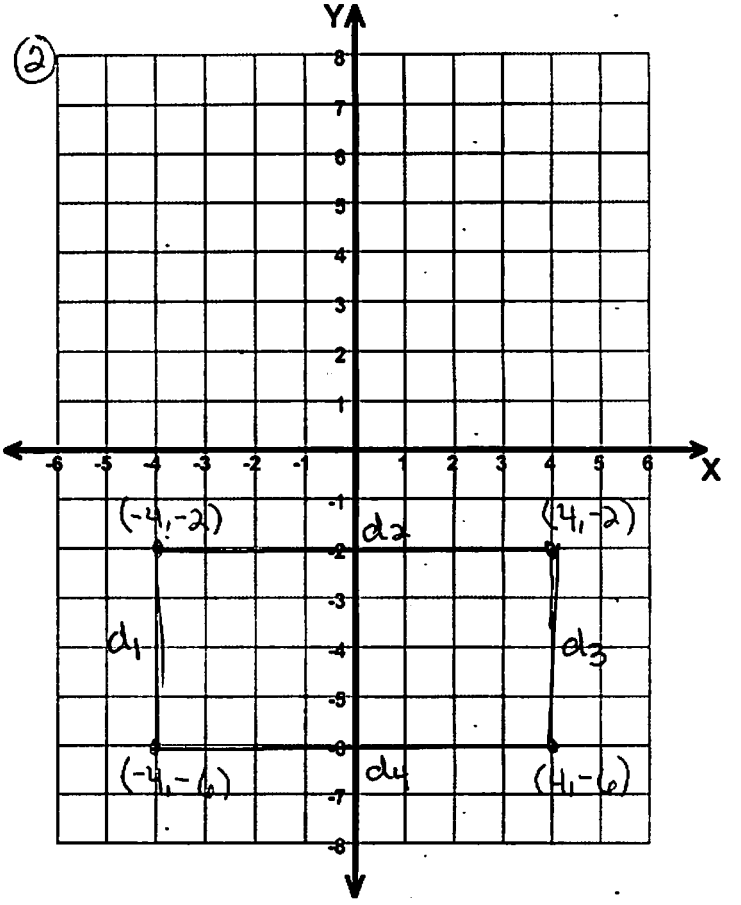

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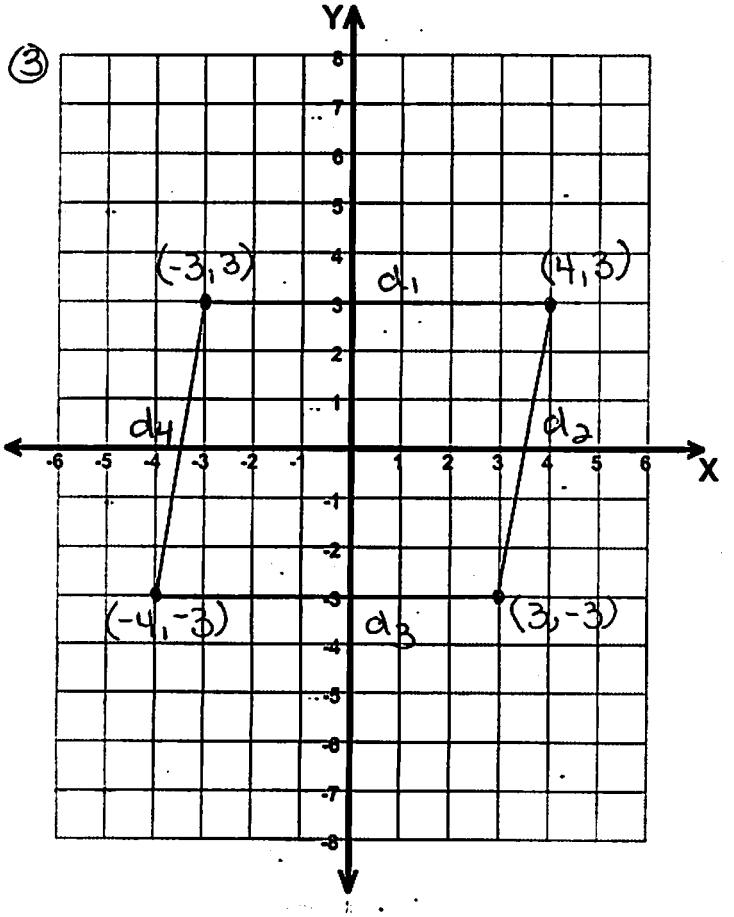

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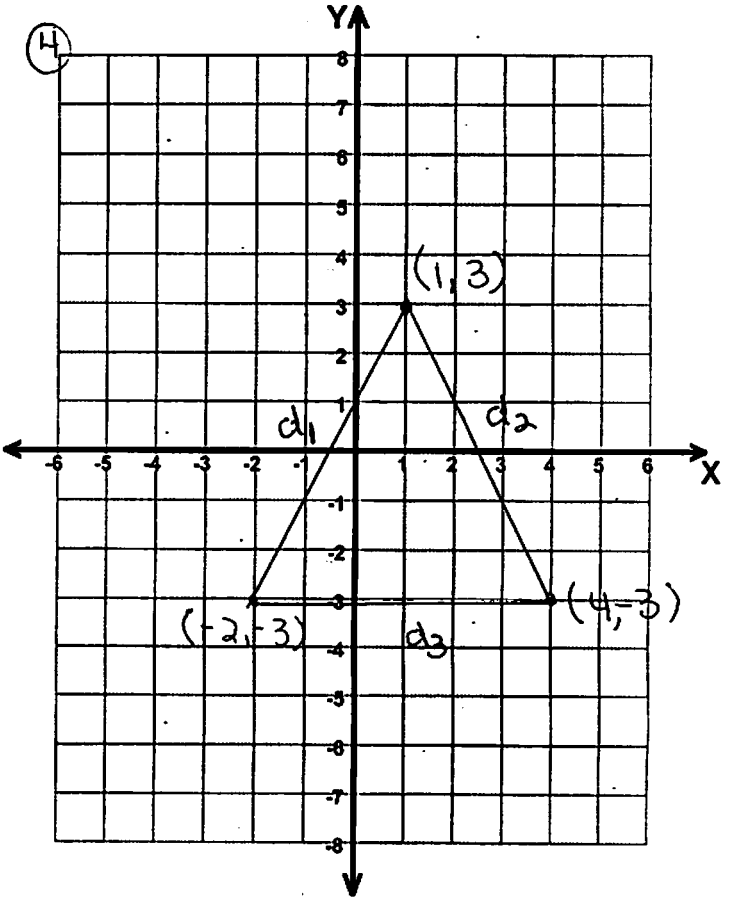

Name 1 _____ Name 2 _____