**Coordinate Geometry Review Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**FOR PROBLEMS 1 – 3: START WITH A GRAPH OR A GOOD SKETCH. All answers should be determined algebraically using coordinate geometry formulas.**

1. Plot the points P(-6, 5), Q(2, 9), and R(12,-1)
2. Write an equation for the perpendicular bisector of .
3. Write an equation for the perpendicular bisector of 
4. Solve a system of equations to find the coordinates of the point Z, the intersection of the two perpendicular bisectors.
5. Verify that Z is equidistant from all three points by finding the lengths PZ, QZ and RZ.
6. The following questions refer to ∆ABC with coordinates A(-37, 16); B(-21, -8); and C(6, 10).
7. Determine whether ∆ABC is a right triangle.
8. Determine whether ∆ABC isosceles.
9. Find the area of ∆ABC.
10. Point A is the midpoint of . Find the coordinates of point D.
11. Given the point E(7, -2) find each of the following (*note: these are independent, NOT sequential)*.

a.  b.  c.  d. 

e.  f.  g.  h. 

1. Given the diagram below
2. Construct P’, the reflection of the point P over the line .
3. Construct P”, the translation of P by the vector .
4. Construct, , the rotation of  by 90° around point P.

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1. Given the diagram below.
   1. Describe the transformation of ∆ABC below as a composition of two *direct* isometries. Begin by superimposing A and A’’. Be specific and use correct notation. Sketch the intermediate step and label.
   2. Describe the transformation of ∆ABC below as a composition of two *opposite* isometries. Begin by superimposing C and C’’.

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