Module 6 Review

Name: _Key_

Date: _____ Period: _____

1. Given a coordinate plane. For each point named below, give its reflection across (1) the x-axis, (2) the y-axis, and (3) the origin.   A(4, -3)   B(-6, -8)

① $(4, 3)$ ① $(-6, 8)$

② $(-4, -3)$ ② $(6, -8)$

2. For each problem in #1, reflect it across $y = x$ and $y = -x$.

$(-3, 4)$ $(3, -4)$ $(6, 8)$ $(-8, -6)$

3. Find the image of each of the following points under a translation by (-2, 7).

A(3, -2)   B(4, 6)   C(-3, 11)

$(1, 5)$ $(2, 13)$ $(-5, 18)$

4. Find the image of A(3, 11) under a translation that takes (3, 4) to (-5, 6).

$(-5, 13)$ $(x, y) \rightarrow (x-8, y+2)$

5. Write the equation for the line of reflection that maps A(1,3) onto A'(9, 13). Include a graph.

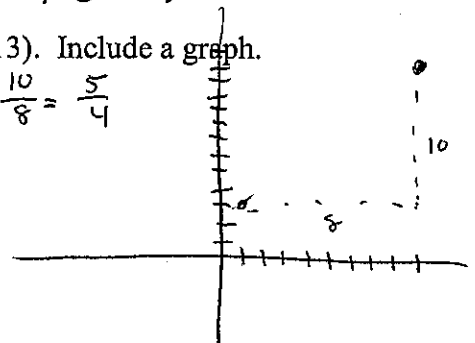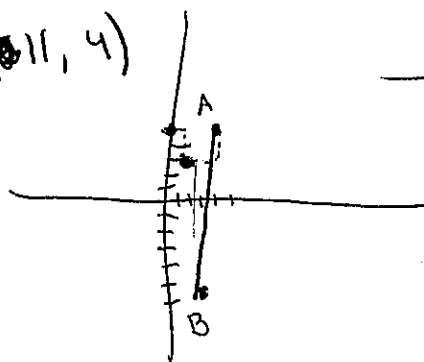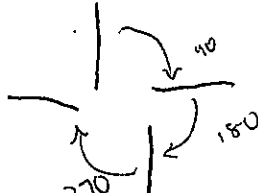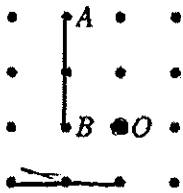$y = -\frac{4}{5}(x - 4) + 8$ $\frac{1+9}{2}$, $\frac{3+13}{2}$ $\frac{10}{8} = \frac{5}{4}$

6. Rotate A(4, 5) and B(3, -6) about (2, 3) 90°. Include a graph.

$A'(0, 5)$ $B'(11, 4)$

7. Rotate $\overline{AB}$ -270° about point O.

8. For which of the four quadrilaterals – parallelogram (P), rectangle (Re), rhombus (Rh), square (S) – can each of the following properties be proved?

    a. The diagonals bisect each other. All

    b. Diagonals are congruent. Re S

    c. Opposite angles are congruent.

        All

    d. Consecutive angles are congruent. Sq Re

    e. Consecutive angles are supplementary. all

    f. Consecutive sides are congruent. Sq, Rh

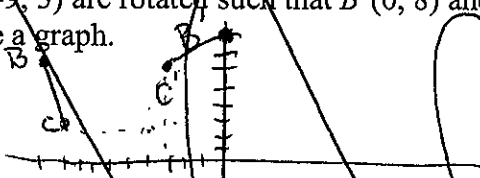   g. Opposite sides are congruent. all

9. What is the rotational symmetry for a dodecagon?

$\frac{360}{12} = 30°$
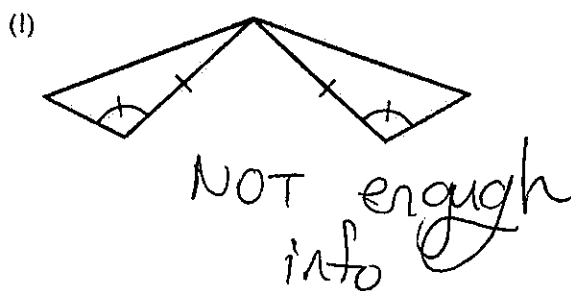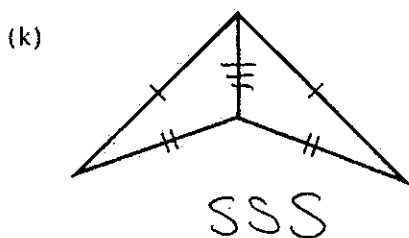
10. How many lines of symmetry does a dodecagon have?

12

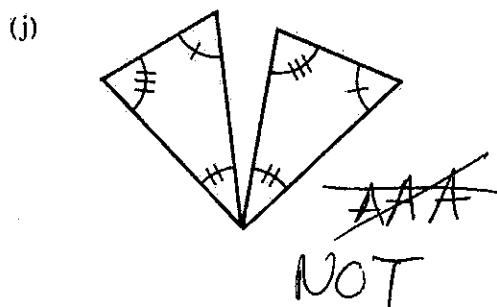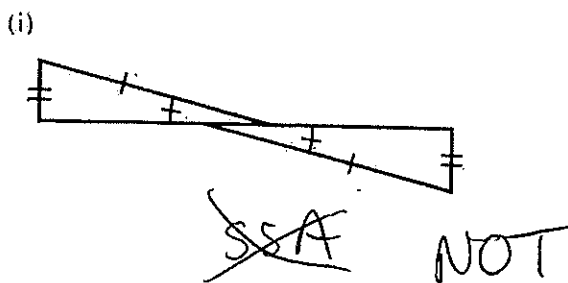11. B(-10, 6) and C(-9, 3) are rotated such that B'(0, 8) and C'(-3, 7). Find the center of rotation and angle of rotation. Include a graph.

90°

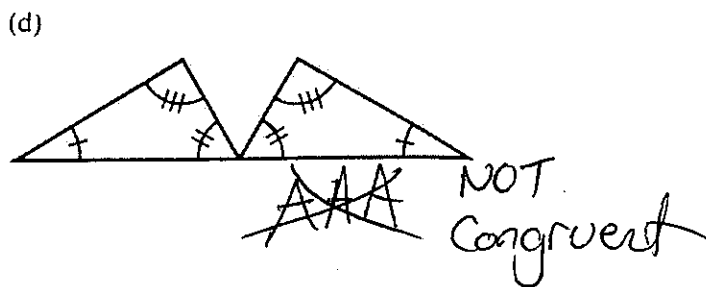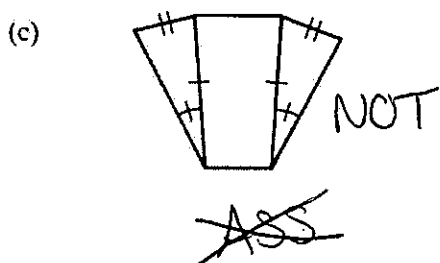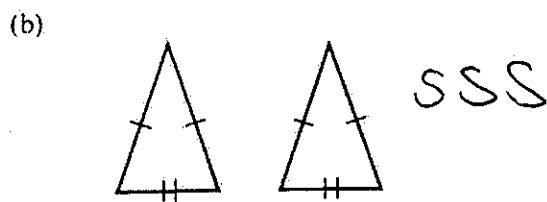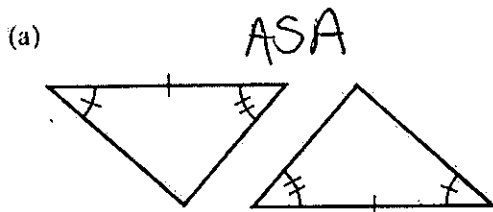12. For each of the pairs of triangles sketched below, like markings indicate congruent parts. Name the congruence postulate (SAS, ASA, SSS), if any, that will prove the triangles are congruent.
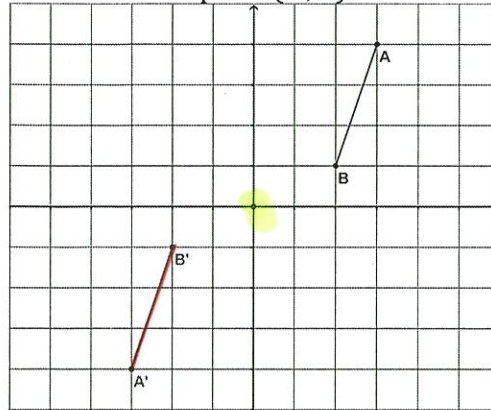
(a) ASA

(b) SSS

(c) NOT ~~ASS~~

(d) NOT Congruent ~~AAA~~

(e) ~~ASA~~

(f) SAS

(g) ASA

(h) ~~SSA~~ NOT

(i) ~~SSA~~ NOT

(j) ~~AAA~~ NOT

(k) SSS

(l) NOT enough info.

Honors Geometry – Mr. Moldovan
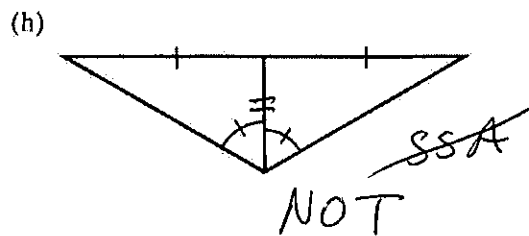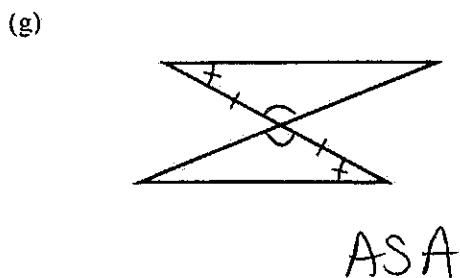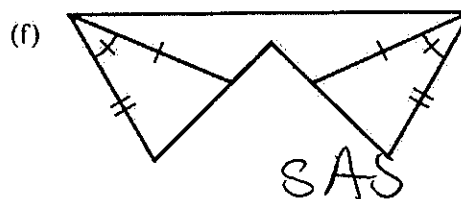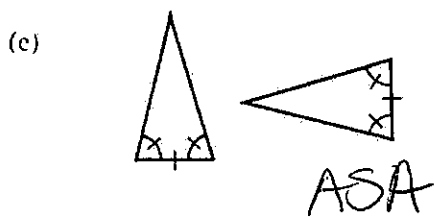
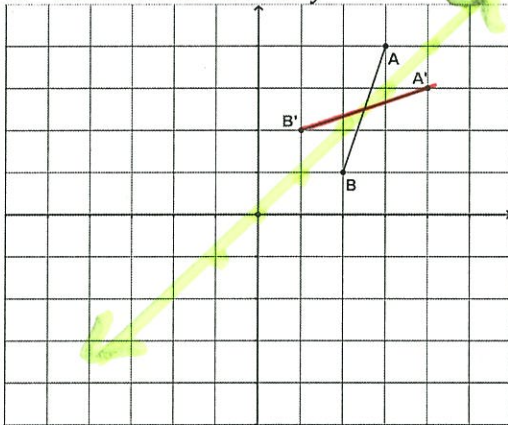*Perform the requested transformations. Make sure to label A' and B'.*
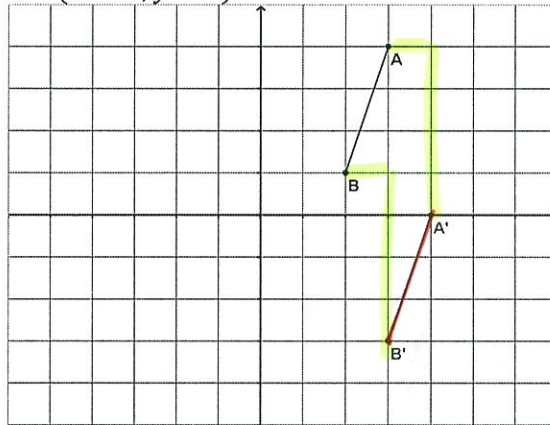
1. Reflect over the x-axis
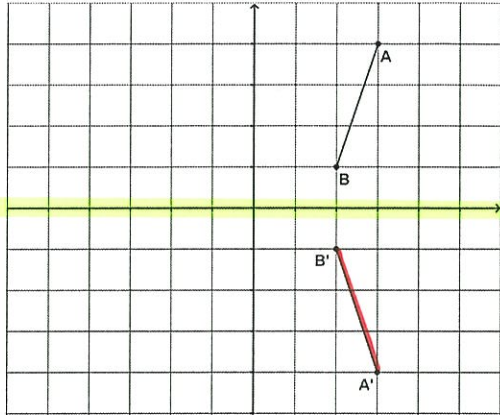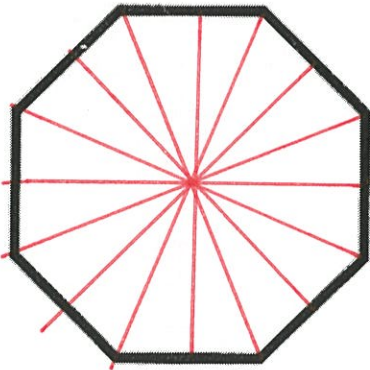
2. Rotate 180° counter-clockwise around the point (0 , 0).

3. Reflect over the line $y = x$.

4. $(x + 1, y - 4)$

Part III: Short Answer

5. What is the name of the shape on the left?
   octagon

6. How many diagonals are there on the shape to the left?
   20

7. Draw all the lines of symmetry on the shape.

8. How many lines of symmetry are there on the shape to the left?
   16

9. List all of the degrees of rotational symmetry for the shape above.

   45°, 90°, 135°, 180°, 225°, 270°, 315°, 360°

10. What are the angles of rotation for a 20-gon? How many lines of symmetry (lines of reflection) will it have?

    18°, 36°, 54°, ..., 360°
   **20 lines of symmetry**

6. Construct a square so that $\overline{AB}$ is one of the sides of that square using only a compass and a straight edge. Write out the steps used to complete the construction

A

B
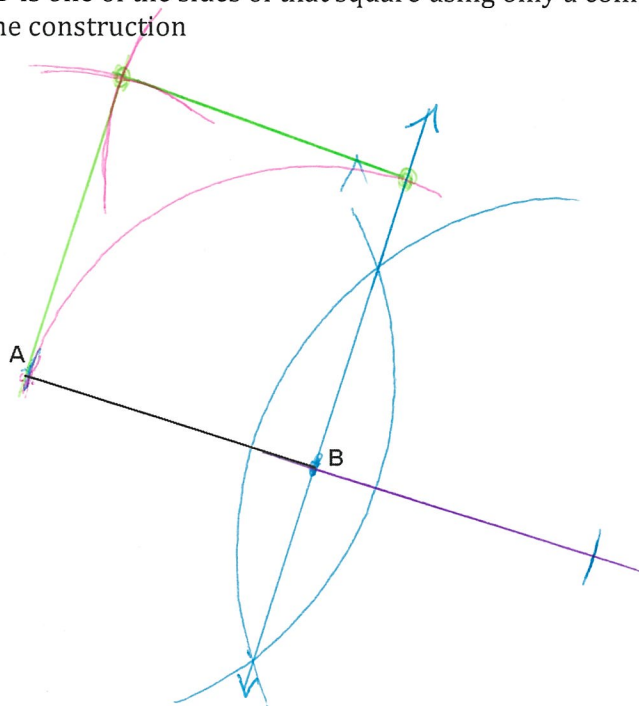
7. Inscribe a square, hexagon, or equilateral triangle into the circle provided below using only a compass and a straight edge. Write out the steps used to complete the construction
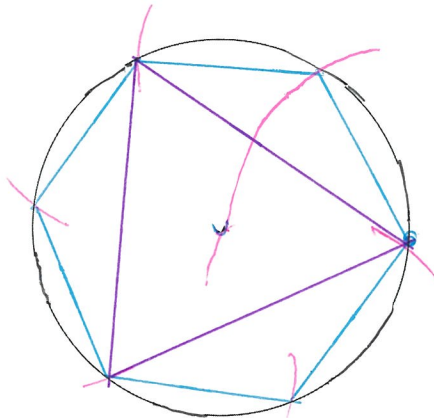
8. Construct a rhombus below so that $\overline{BC}$ is one of the sides of your rhombus and $\angle ABC$ is one of the angles. You can *only* use a compass and a straight edge. Write out the steps used to complete the construction
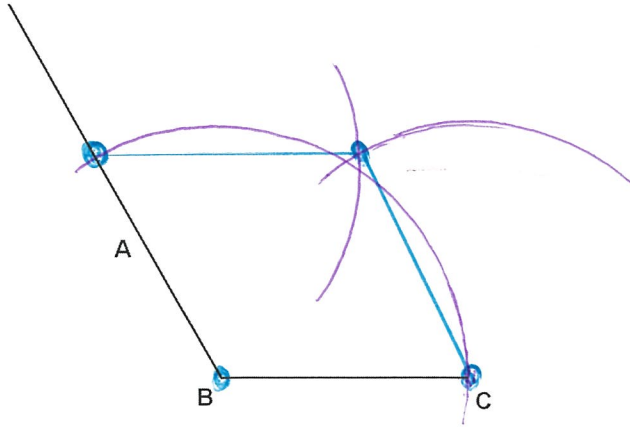
9. Reflect the quadrilateral over the given line. Write out the steps used to complete the construction
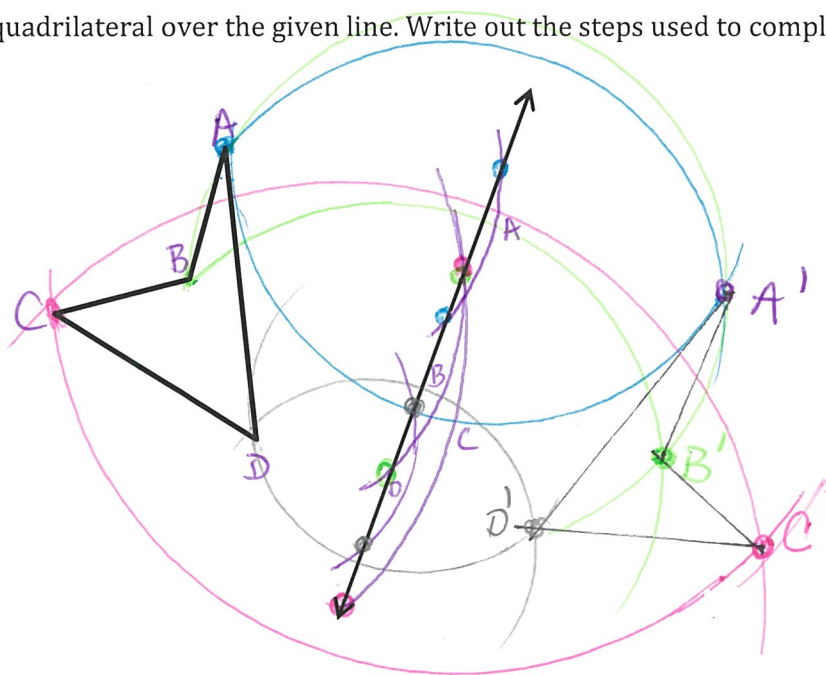
Below is a list of concepts that will be covered on your Module 6 Test.

- *Given a rigid motion transformation, find the exact reflection, translation, and/or rotation that occurred using the correct notation when necessary (#1-3)*
- *Identify triangles are congruent by ASA, SSS, SAS(#4-5)*
- *Do the following constructions:*
  - *Parallel lines*
  - *Perpendicular bisector*
  - *Angle bisector*
  - *Copy an angle*
  - *Parallelogram/ Rhombus*
  - *Reflect an object over a line*
  - *Hexagon, equilateral triangle, or a square inscribed in a circle*