Unit 10H Review of Transformations

Name:_____Per:_____

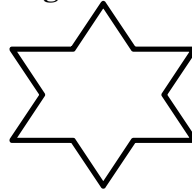1. Draw **ALL lines of symmetry** and find the **angle of rotation** for the figures below:

   a.
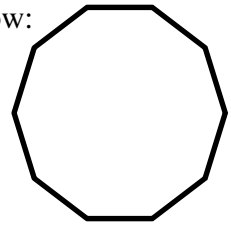
   b.

   c.

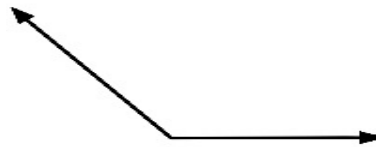   Angle of rotation: _____   Angle of rotation: _____   Angle of rotation: _____
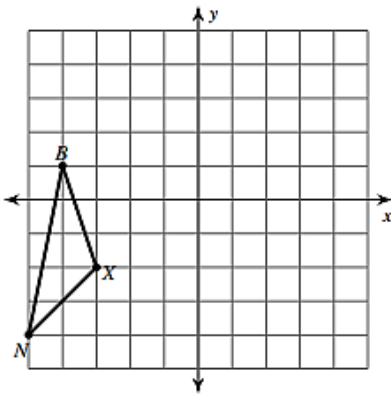
   # of Diagonals: _____

   d. If a Triangle were equilateral, how many lines of symmetry would it have? _____ What would be the angle of rotation? _____

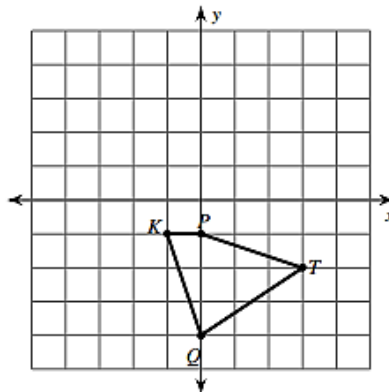2. Bisect the following angle.

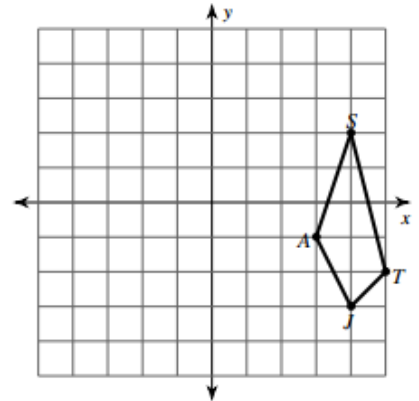3. **Make and label** the images for the following transformations.

   a. Reflect $\triangle BNX$ across the line $y = -3x - 5$

   b. Rotate $KPTQ$ about the point $(2, 1)$ $270°$

   c. Translate $JAST$ up 3 units and to the left 6 units

4. Write the translation rule for part c _____

5. Write the translation rule to move point P $(3, -1)$ to point P' $(-9, 11)$, _____

6. Given quadrilateral MATH with **vertices M(0,3), A(–2,8), T(–4,6), H(2, –5),** find the coordinates of the vertices of the image of M'A'T'H' using the following translation rule. $(x,y) => (x - 4, y + 9)$
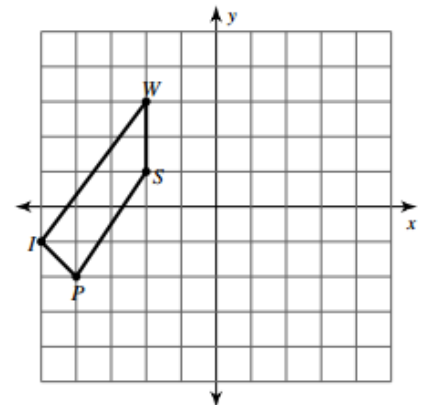
   M'_____ A'_____ T'_____ H'_____

7. Perform the following composition of transformations and label the imagea:

   a. Reflect across the line $y = -3x$ and label $S'W'I'P'$

   b. Reflect $S'W'I'P'$ across the line $y = \frac{1}{4}x - 2$ and label.

   c. What do you know about the point of rotation that maps S onto S' and S''.

8. Use the grid to the right to answer the following. Plot the point **C(–3, 2), C'(3, 4)**, and **C"(1, –4).**
   a. What is the midpoint of C and C'? _____
   b. What is the equation for the line of reflection that transforms point C onto C'? _____ (CONSTRUCT IT.)
   c. What is the equation for the line of reflection that transforms point C' onto C"? _____ (CONSTRUCT IT.)
   d. If C' and C" were rotations of point C, what point would be the center of rotation for C to be mapped to C' and C"? _____ Circle it.
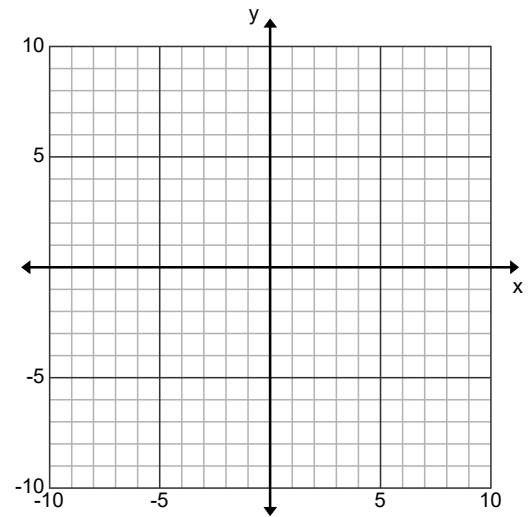
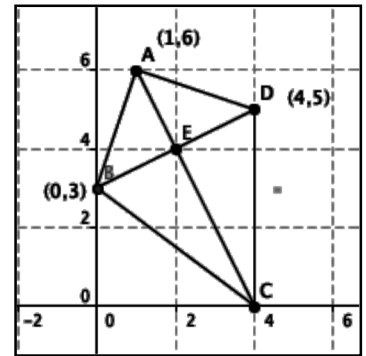9. **CONSTRUCT** the line of reflection for each of the figure below.
   a.
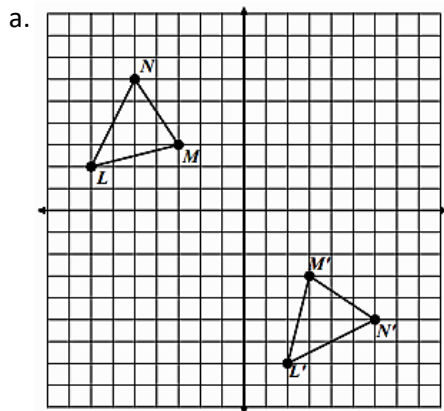
   b. Algebraically find the line of reflection for question 9a. SYW.

Equation:

10. Use the image right to answer the questions about center of rotation.
    a. Is C a point of rotation for A, B, and D? _____ Explain _____
    _____
    b. Is E a point of rotation for A, B, and D? _____ Explain _____
    _____

Draw the following transformations for the triangle to the right.
11. Reflect ΔDEF across the line and label $\Delta D'EF'$.

12. Rotate $\Delta D'E'F'$ $180°$ around the point.