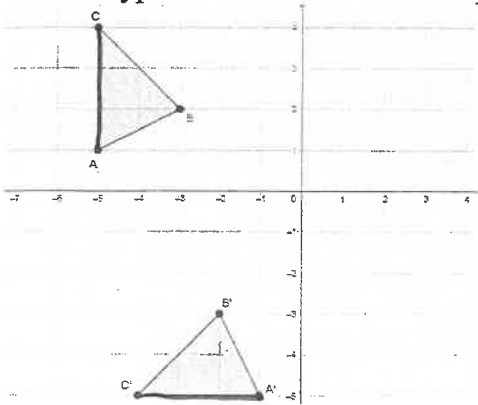


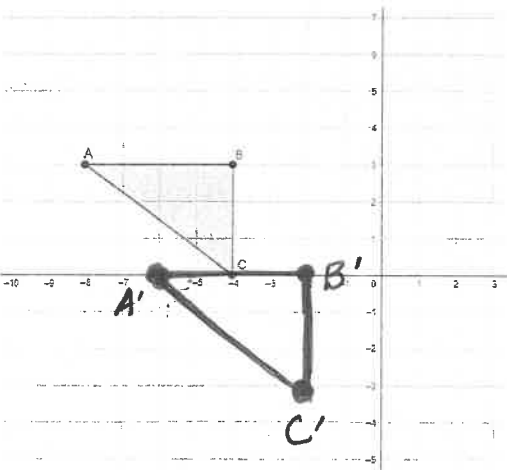
Unit 1 Transformations and Symmetry Test Review

1. What type of transformation was applied to triangle ABC?



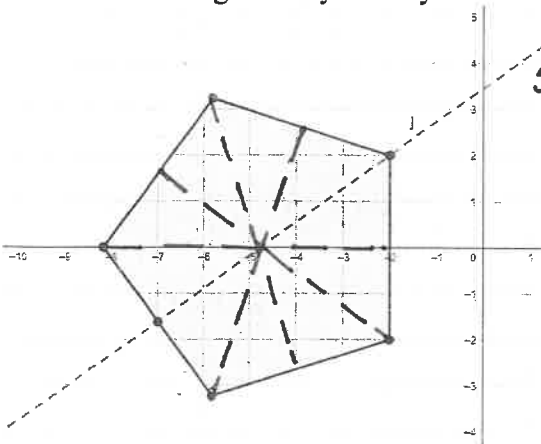
Rotation 90° CCW

2. Translate triangle ABC two units right and three units down. Make sure you label correctly. Give the algebraic rule for this transformation.



$$(x, y) \rightarrow (x + 2, y - 3)$$

3. In the figure below, one of the lines of symmetry is drawn. Draw the other lines of symmetry. List the rotational angles of symmetry to 360° .



$$\begin{array}{r} 72 \\ 5 \overline{) 360} \\ \underline{35} \\ 10 \\ \underline{10} \\ 0 \end{array}$$

$72^\circ, 144^\circ, 216^\circ, 288^\circ (360^\circ)$

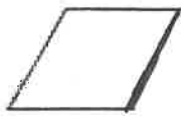
4. A regular nonagon, which has 9 equal sides, has 9 lines of reflection symmetry and rotational symmetry by turning the figure any multiple of 40° degrees. $9 \overline{) 360}$
 $\begin{array}{r} 9 \overline{) 360} \\ 36 \end{array}$

5. For each of the following figures, describe and illustrate the rotations (angles) and/or reflections (lines of symmetry) that carry the figure onto itself.

Parallelogram

changed picture
Rhombus

Parallelogram: Angles 180° (360°)

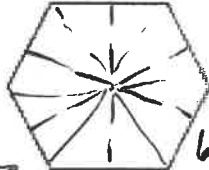
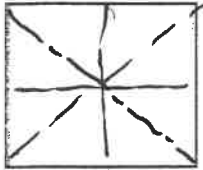


Number of Lines: none
of symmetry

Rhombus: Angles 180° (360°)

Number of Lines: 2
of symmetry

Square: Angles $90, 180, 270$



Number of Lines: 4
of symmetry

Hexagon: Angles $60, 120, 180, 240, 300$

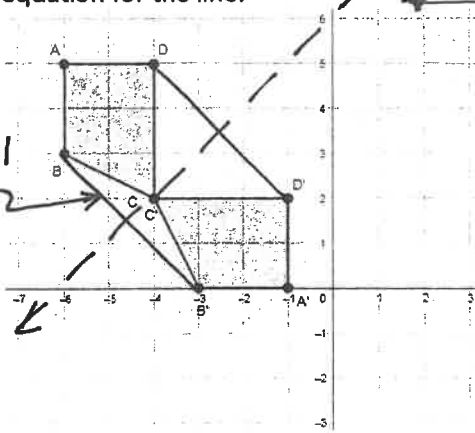
Number of Lines: 6 ~~Square~~
of symmetry

Square \uparrow
Hexagon

Hexagon

$6 \overline{) 360}$
 $\begin{array}{r} 60 \end{array}$

6. Trapezoid ABCD was reflected to produce trapezoid A'B'C'D'. Graph the line of reflection and write the equation for the line.

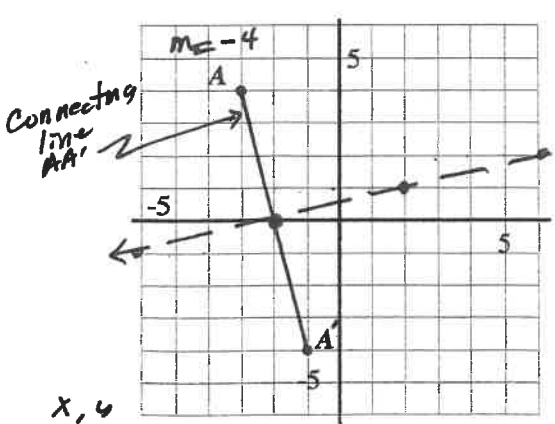


slope = $+1$ and y-int 6 or $(0, 6)$
eg. $y = 1x + 6$

slope = -1

7. Draw the line of reflection on the graph. Write the equation of the line.

* Remember, the line connecting A to A' is perpendicular to the line of reflection



$m(\overline{AA'}) = \frac{-4}{1} = -4$

$m(\text{line of reflection}) = \boxed{\frac{1}{4}}$

eg. of the line of reflection

$y = \boxed{\frac{1}{4}}x + \boxed{\frac{1}{2}}$

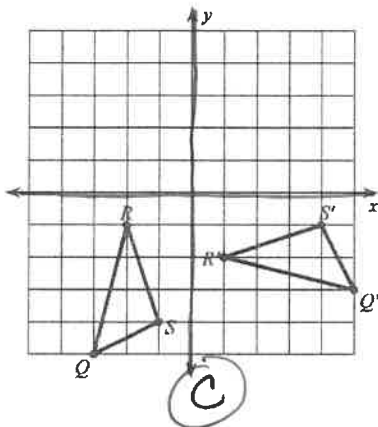
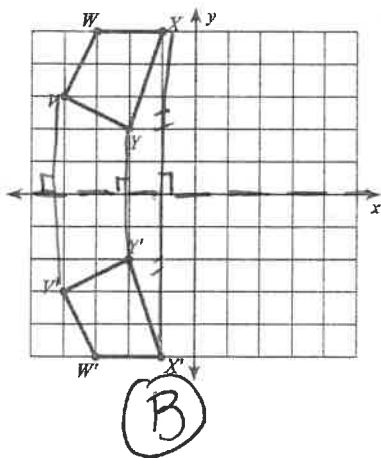
x, y
 $(-2, 0)$
 $y = mx + b$
 $0 = \frac{1}{4}(-2) + b$
 $0 = -\frac{1}{2} + b$
 $\boxed{\frac{1}{2} = b}$

8. Match each graph to the correct description of the relationship between the corresponding preimage points and image points.

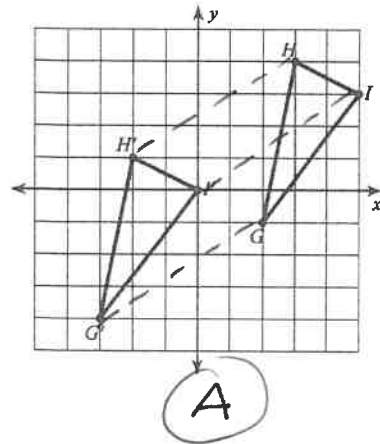
A. This transformation moves points the same distance in the same direction along parallel lines.

B. This transformation moves points across a specific line that is the perpendicular bisector of the segments joining the corresponding points of the preimage to the image.

C. This transformation moves points the same direction along concentric circles through the same angle.



Rotate 90° CCW
about the pt $(0,0)$



I can...

Graph and accurately label a translation, rotation, and reflection

When a verbal description is given

When a translation rule is given

Identify characteristics of the transformations

Identify the type of transformation that was applied to an image

Identify the pre-image and image

Draw a line of reflection and write the equation of that line

Draw and determine how many lines of symmetry a polygon has

Draw diagonals of polygons

Determine what the rotational angles of a regular polygon are up to 360° .