Name: KEY Date: _____ Per: _____

Transformations Review

Answer each of the following questions. Be sure to show all necessary work.

____ 1) If $\triangle A'B'C'$ is the image of $\triangle ABC$, under which transformation will the triangles *not* be congruent?

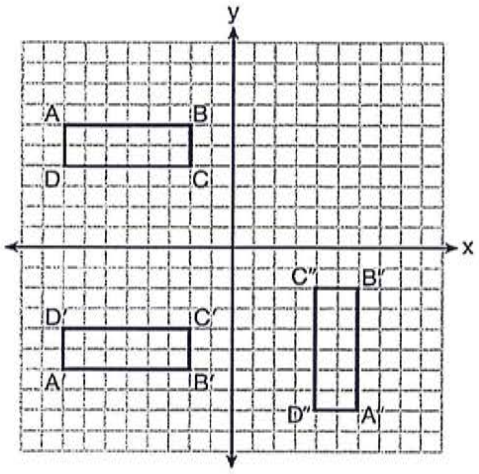
(1) reflection over the *x*-axis

(2) translation to the left 5 and down 4

(3) dilation centered at the origin with scale factor 2

(4) rotation of 270° counterclockwise about the origin

____ 2) A sequence of transformations maps rectangle *ABCD* onto rectangle *A"B"C"D"*, as shown in the diagram below.



Which sequence of transformations maps *ABCD* onto *A'B'C'D'* and then maps *A'B'C'D'* onto *A"B"C"D"*?

1) a reflection followed by a rotation

2) a reflection followed by a translation

3) a translation followed by a rotation

4) a translation followed by a reflection

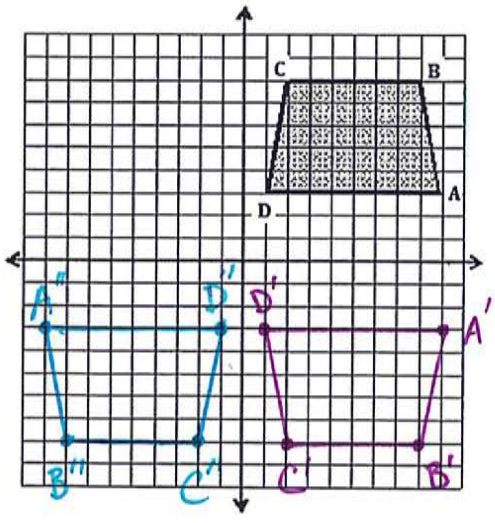
3) Reflect quadrilateral ABCD in the x axis, and then the y axis. Be sure to identify all of your coordinates.

A' (9, -3) A" (-9, -3)

B' (8, -8) B" (-8, -8)

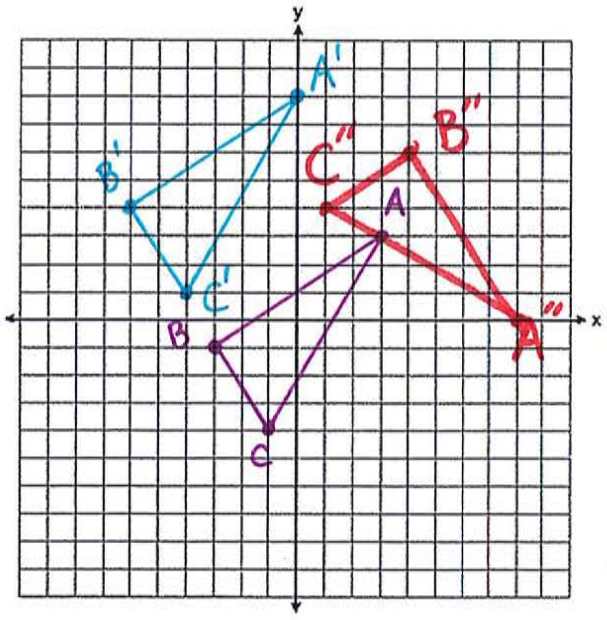
C' (2, -8) C" (-2, -8)

D' (1, -3) D" (-1, -3)



4) Triangle ABC has vertices with $A(3,3), B(-3,-1), and\ C(-1,-4)$ Graph and label ΔABC and ΔA"B"C", the image of ΔABC after $R_{-90} o\ T_{(-3,5)}$

A' (0,8) A' (8,0)
B' (-6,4) B' (4,6)
C' (-4,1) C' (1,4)



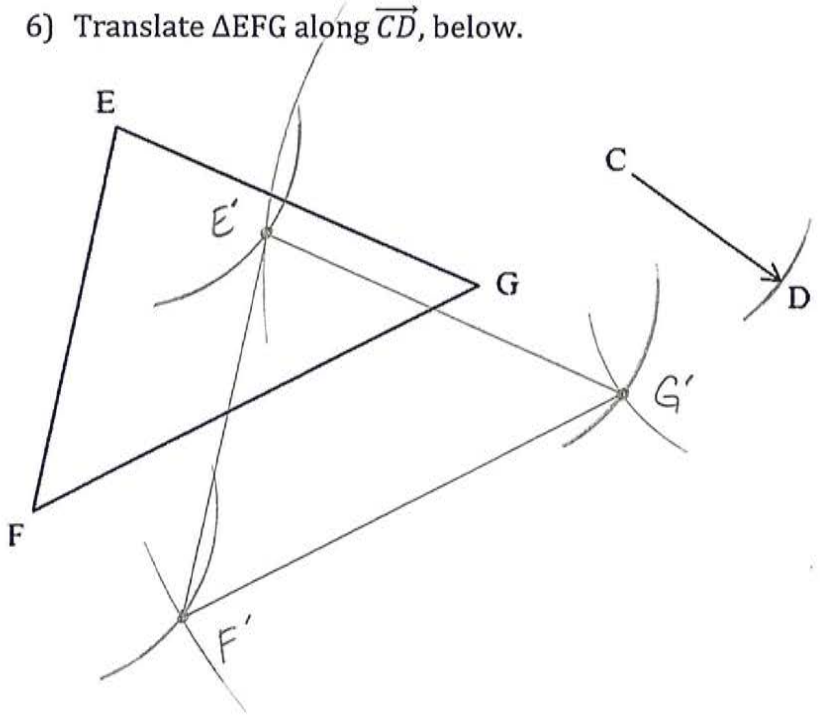
5) Precisely define each of the three rigid motion transformations identified below:

a. $R_{C,90}(\Delta ABC)$ Rotate 90° counter-clockwise around point C

b. $T_{(-2,5)}(\Delta ABC)$ Slide left 2 units & up 5 units

c. $r_{y=x}$ Flip over the line y=x

6) Translate ΔEFG along $\overrightarrow{CD}$, below.



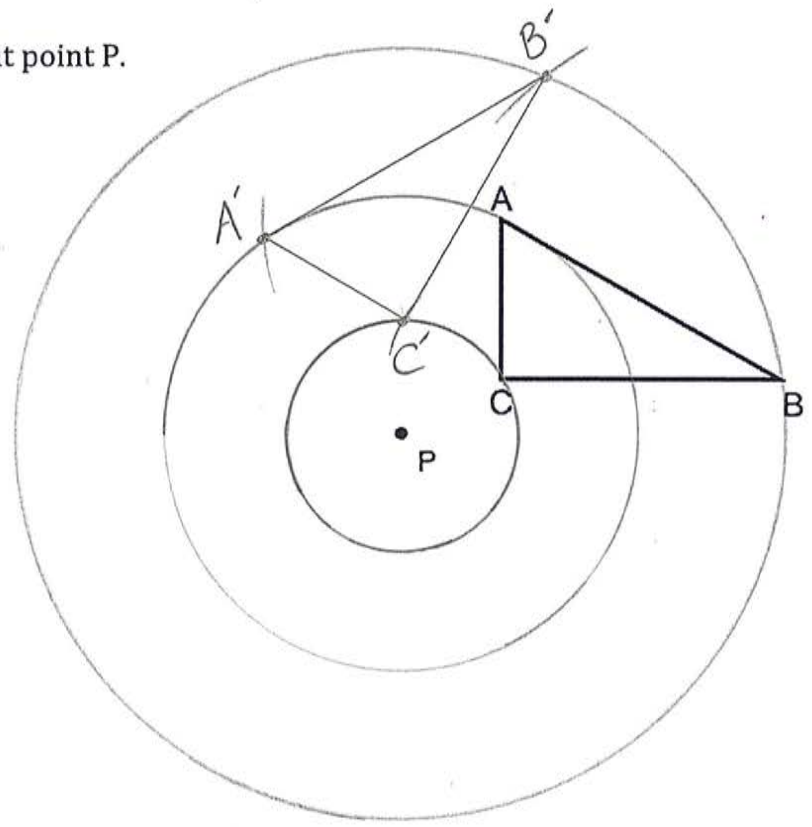
① Measure $\overrightarrow{CD}$

② Hash marks from F, E, G

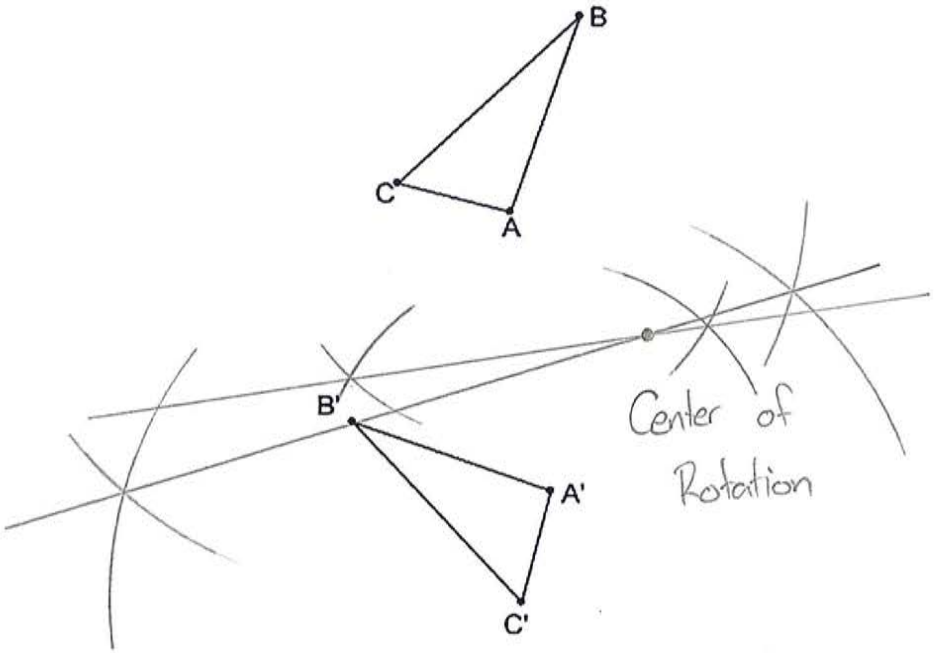
③ Measure FC, then a circle w/ a center at D. Repeat for EC & GC

7) Rotate ΔABC 60° about point P.

↶60°

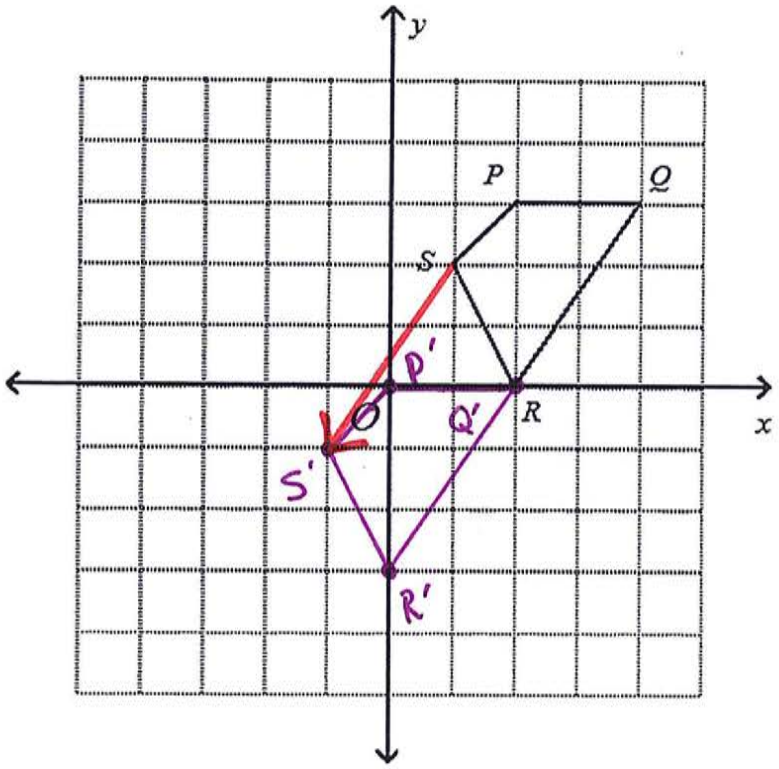


8) Find the center of rotation that mapped ΔABC onto ΔA'B'C' below:

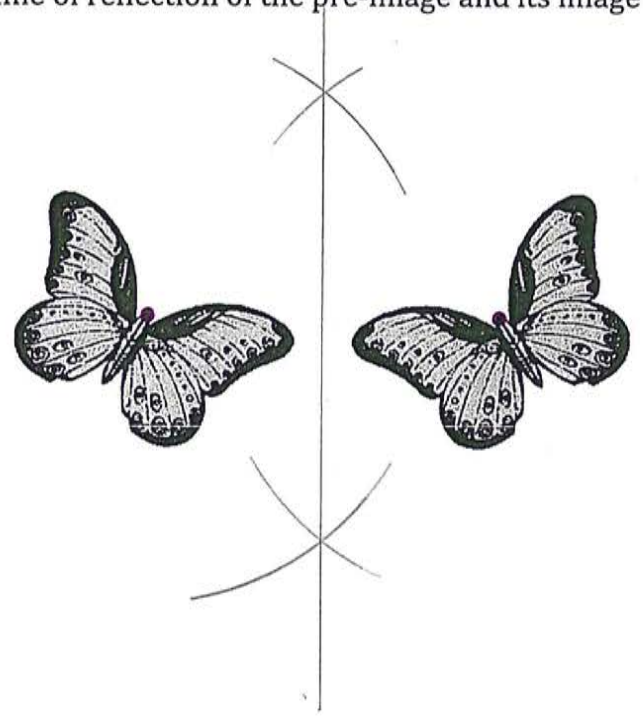


2 ⊥ bisectors

9) Sketch the image of PQRS after a translation of 3 units down and 2 units left. Be sure to sketch the vector of translation.

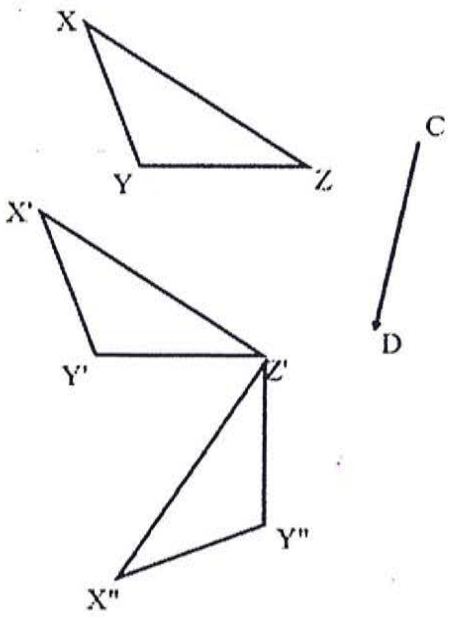


10) Determine the line of reflection of the pre-image and its image below:



l ⊥ bisector

11) Identify the series of rigid motions that mapped ΔXYZ onto ΔX"Y"Z". Be sure to use proper function notation.



$R_{Z,90}\left(T_{\overrightarrow{CD}}(\Delta XYZ)\right)$

12) Perform the indicated operation(s) on ΔCAT below: $R_{C,60} \circ T_{\overrightarrow{HE}}$