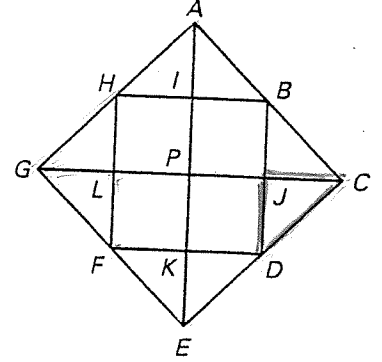*KEY*

Rotation Homework

1. State the segment or triangle that represents the image.

a) 90° clockwise rotation of $\overline{AB}$ about P — $\overline{CD}$

b) 90° clockwise rotation of $\overline{DE}$ about P — $\overline{FG}$

c) 90° counterclockwise rotation of $\overline{GH}$ about P — $\overline{EF}$

d) 180° counterclockwise rotation of $\overline{EF}$ about P — $\overline{AB}$

e) 180° clockwise rotation of $\triangle CJD$ about P — $\triangle GLH$

f) 90° counterclockwise rotation of $\triangle GLF$ about P — $\triangle EKD$

2. On the graphs below, plot and connect the following points. Then rotate them about the origin, with the given degree and direction. Connect the image points.
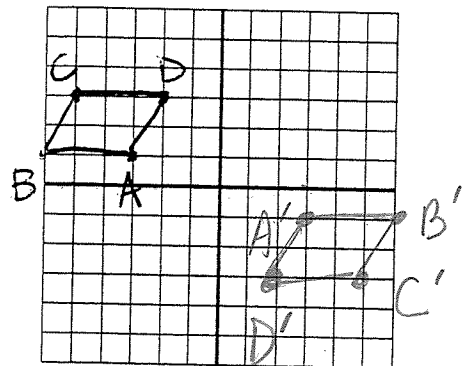
a) 90° counterclockwise

$A(0,4) \rightarrow A'\ (-4, 0)$

$B(2,6) \rightarrow B'\ (-6, 2)$

$C(6,4) \rightarrow C'\ (-4, 6)$

$D(2,2) \rightarrow D'\ (-2, 2)$
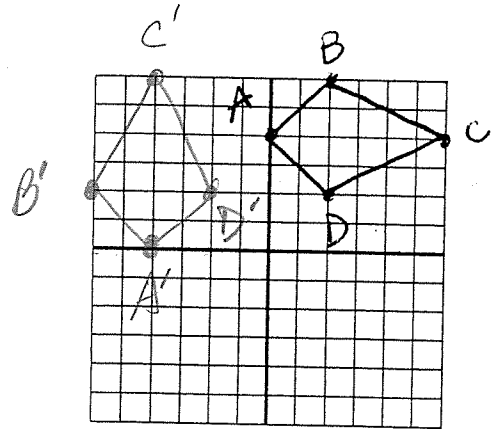
b) 180° clockwise

$A(-3,1) \rightarrow A'\ (3, -1)$

$B(-6,1) \rightarrow B'\ (6, -1)$

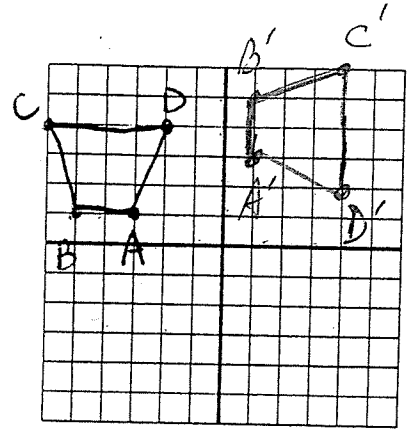$C(-5,3) \rightarrow C'\ (5, -3)$

$D(-2,3) \rightarrow D'\ (2, -3)$

c) 90° clockwise

$A(-3, 1) \rightarrow A'\ (1, 3)$

$B(-5, 1) \rightarrow B'\ (1, 5)$

$C(-6, 4) \rightarrow C''\ (4, 6)$
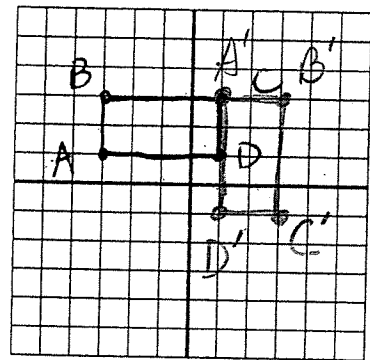
$D(-2, 4) \rightarrow D'\ (4, 2)$

d) 90° clockwise

$A(-3, 1) \rightarrow A'\ (1, 3)$

$B(-3, 3) \rightarrow B'\ (3, 3)$

$C(1, 3) \rightarrow C''\ (3, -1)$

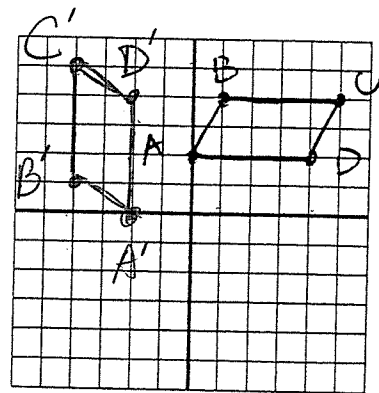$D(1, 1) \rightarrow D'\ (1, -1)$

e) 90° counterclockwise

$A(0, 2) \rightarrow A'\ (0, -2)$
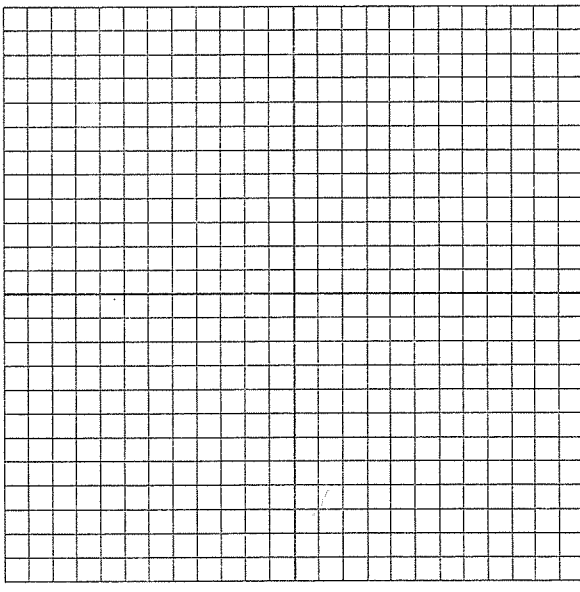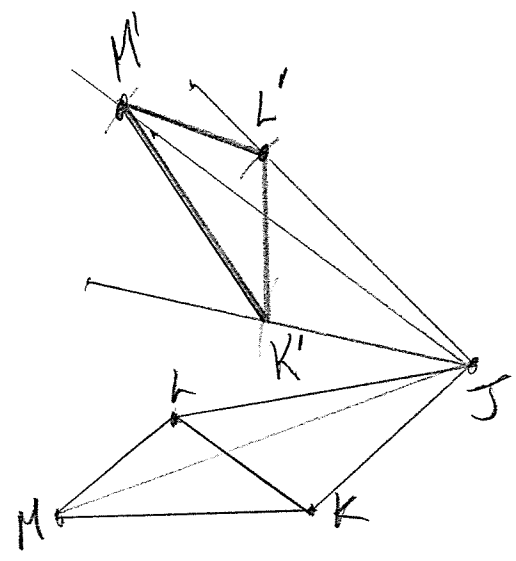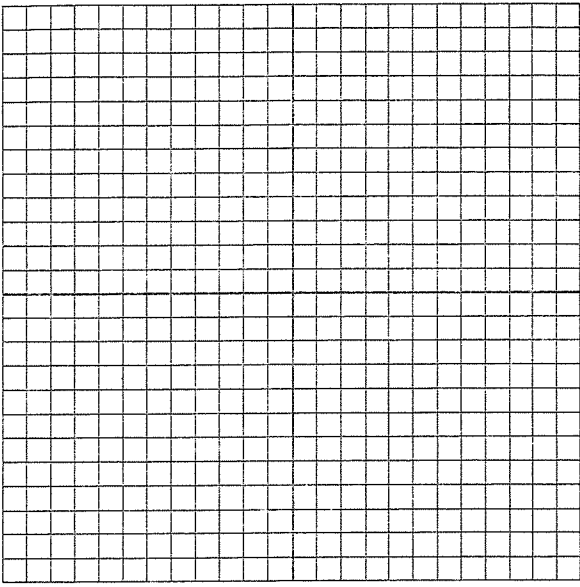
$B(1, 4) \rightarrow B'\ (-4, 1)$

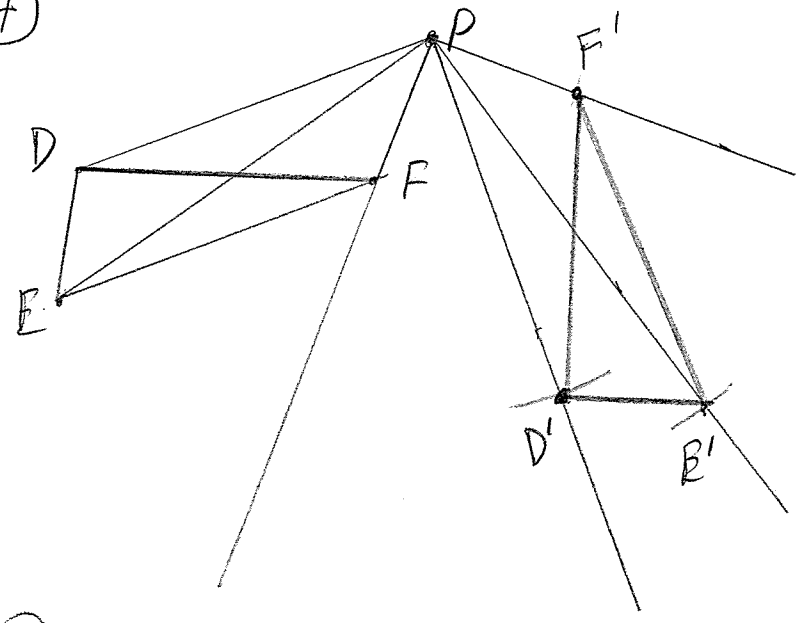$C(5, 4) \rightarrow C''\ (-4, 5)$

$D(4, 2) \rightarrow D'\ (-2, 4)$

③ clockwise rotation 55°

④

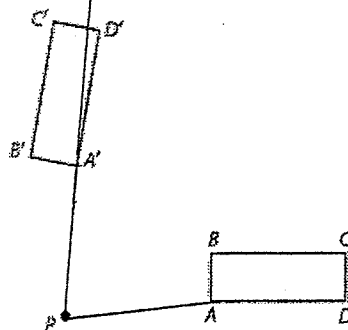

⑪ $F(-1, -3) \rightarrow F'(1, 3)$
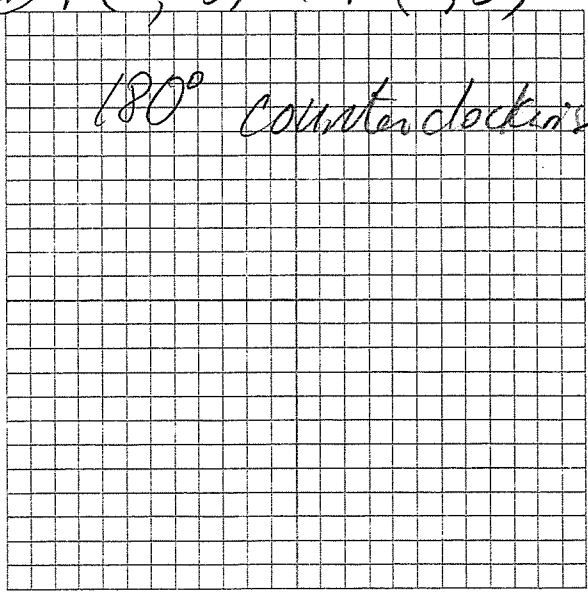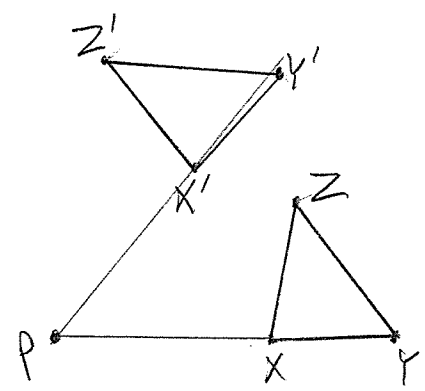
180° counterclockwise ⑨

53° counterclockwise about P

Name: _____KEY_____
Date: _____

2. Find the angle of rotation and the direction of rotation in the given figure. Point P is the center of rotation.
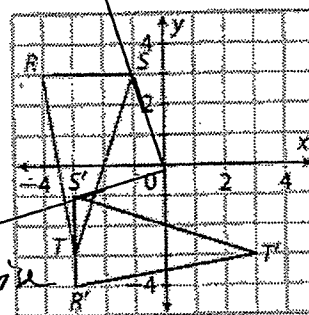
$80°$ counterclockwise

3. Write an algebraic rule for the rotation shown. Then describe the transformation in words.

$S(-1, 3)$ $S'(-3, -1)$

$(x, y) \longrightarrow (-y, x)$

Rotate about the origin $90°$ counterclockwise

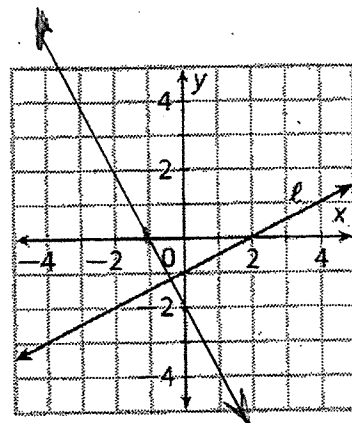5. Write the equation of the image of line l after a clockwise rotation of 90°.

$m = -2$ $b = -2$

$\boxed{y = -2x - 2}$

$m = \frac{1}{2}$

Pick 2 points & find their images:
$(0, -1) \rightarrow (-1, 0)$
$(2, 0) \rightarrow (0, -2)$

7. The Skylon Tower, in Niagara Falls, Canada, has a revolving restaurant 775 feet above the falls. The restaurant makes a complete revolution once every hour. While a visitor was at the tower, the restaurant rotated through 135°. How long was the visitor at the tower?
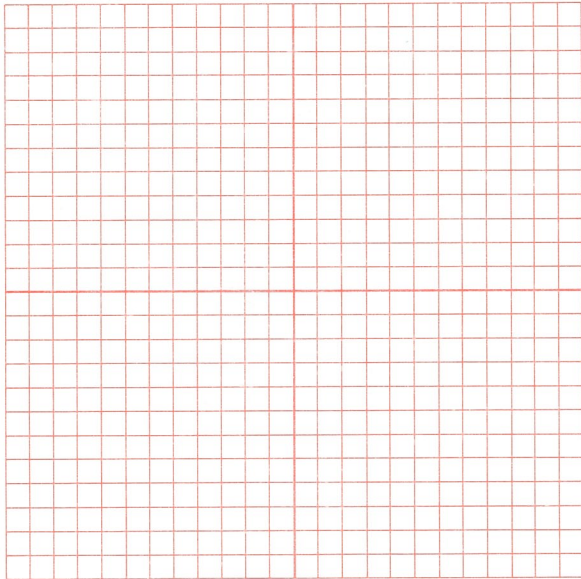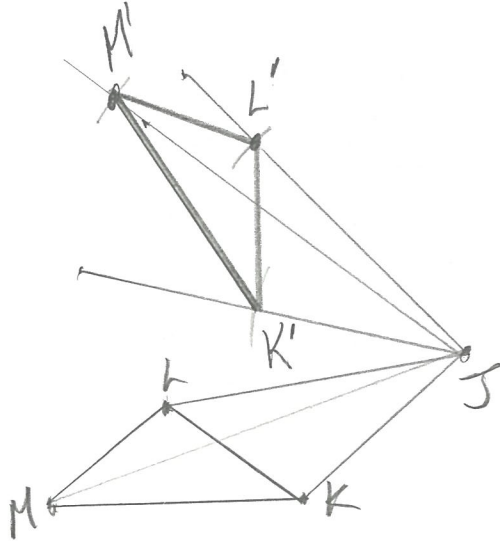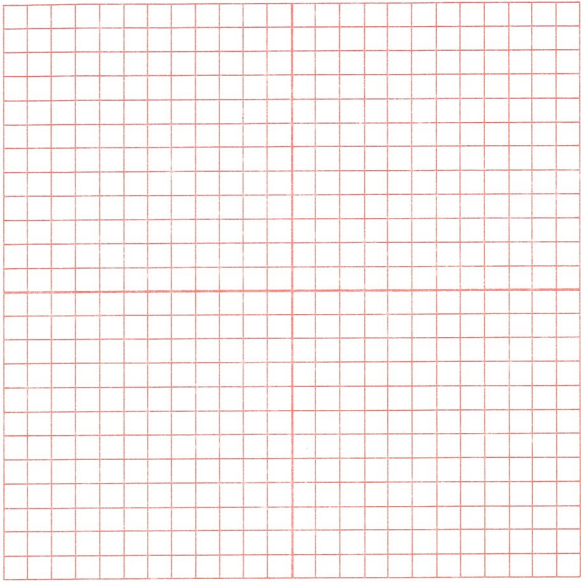
$\dfrac{135}{360} = \dfrac{3}{8} \longleftarrow \dfrac{3}{8}$ of an hour
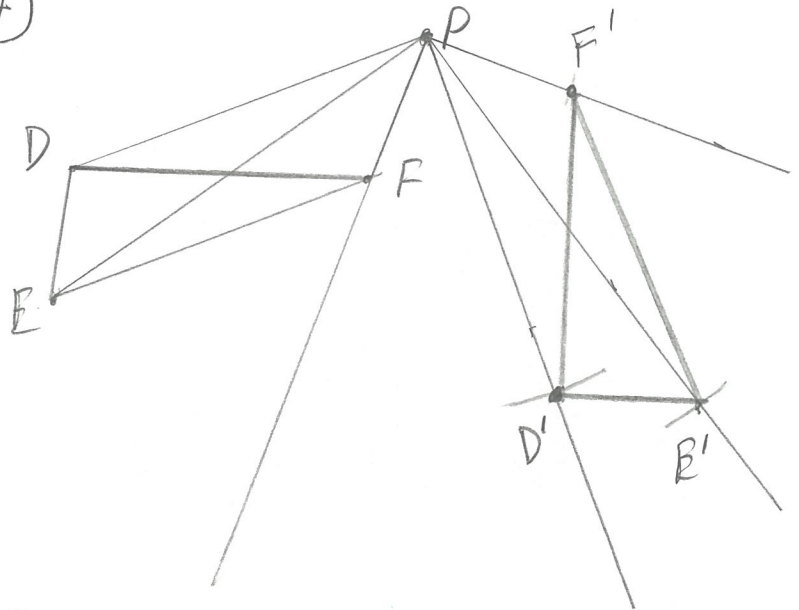
↑
degrees in 1 revolution

$\dfrac{3}{8} \times 60 \text{ min} = 22\frac{1}{2} \text{ minutes}$
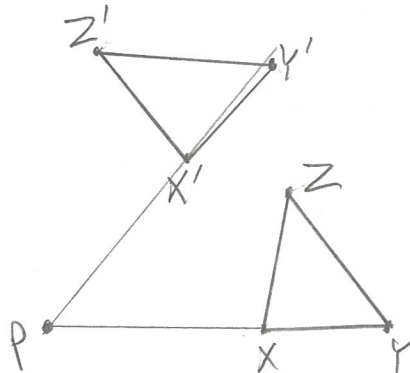
③ clockwise rotation 55°

④
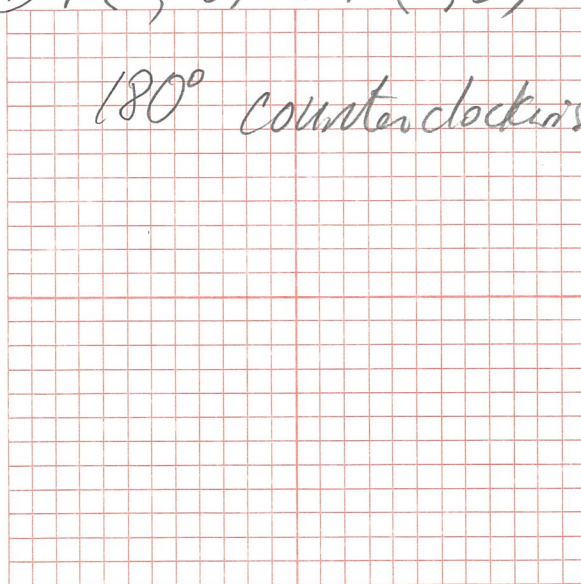

⑪ $F(-1, -3) \rightarrow F'(1, 3)$

180° counterclockwise ⑨

53° counterclockwise about P