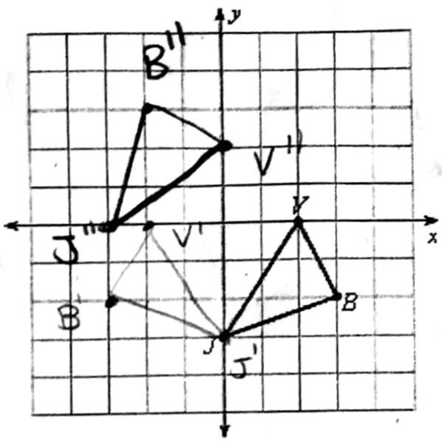
CCSS Geometry Name Key ID: 1

G1B Level Test Review

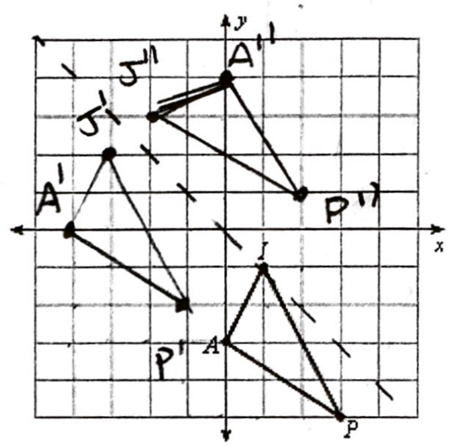
Date________________ Period____

Perform the following transformations. Label all transformations using prime notation.

1) Reflect the image across the y-axis and then rotate it 90 degrees clockwise.

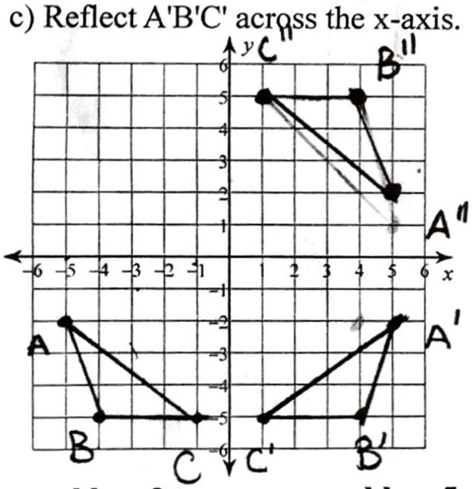


2) Translate the image according to the rule $(x, y) \dashrightarrow (x-4, y+3)$ and then reflect it across the line $y = -x$.

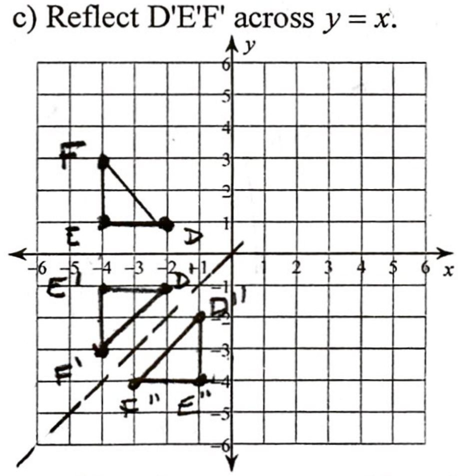


For 3-4, plot the points to make a shape and then perform the transformations. Label all transformations using prime notation.

3) a) Plot A(-5, -2), B(-4, -5), C(-1, -5)
b) Reflect ABC across the y-axis.
c) Reflect A'B'C' across the x-axis.



4) a) Plot D(-2, 1), E(-4, 1), F(-4, 3)
b) Reflect DEF across the x-axis.
c) Reflect D'E'F' across $y = x$.



Use problem 3 to answer problem 5.

5) Describe a single transformation to go from triangle ABC to triangle A"B"C". State the type of transformation and how far it went. Also write the rule using (x, y) -->(x', y') notation.

Type: Rotation

Description: Rotation 180°

Rule: $(x, y) \rightarrow (-x, -y)$

Use problem 4 to answer problem 6.

6) Describe a single transformation to go from triange DEF to triangle D"E"F". State the type of transformation and how far it went. Also write the rule using (x, y) -->(x', y') notation.

Type: Rotaton

Description: Rotation 90° CCW

Rule: $(x, y) \rightarrow (-y, x)$

7. Match each description with its coordinate rule.

a. 6 Translate (shift) *a* horizontal units and *b* vertical units
b. 2 Reflect across the x-axis
c. 1 Reflect across the y-axis
d. 8 Reflect across the line y = x
e. 4 Rotate 90° counterclockwise (or 270° clockwise) about the origin
f. 5 Rotate 180° counterclockwise (or 180° clockwise) about the origin
g. 3 Rotate 270° counterclockwise (or 90° clockwise) about the origin
h. 7 Dilate with respect to the origin by a factor of *c*

1. $(x, y) \rightarrow (-x, y)$
2. $(x, y) \rightarrow (x, -y)$
3. $(x, y) \rightarrow (y, -x)$
4. $(x, y) \rightarrow (-y, x)$
5. $(x, y) \rightarrow (-x, -y)$
6. $(x, y) \rightarrow (x + a, y + b)$
7. $(x, y) \rightarrow (cx, cy)$
8. $(x, y) \rightarrow (y, x)$

8. Without looking at your notes, describe the transformation(s) that would occur for each of the following coordinate rules.

a. $(x, y) \rightarrow (-x, y)$
reflect across y-axis

b. larger
$(x, y) \rightarrow (3x, 3y)$
dilate scale factor of 3

c. smaller
$(x, y) \rightarrow (\frac{1}{4}y, \frac{1}{4}x)$
dilate by a scale factor & $\frac{1}{4}$ reflected y=x

9. Write the coordinate rule for each transformation or set of transformations.

a. Reflect across the x-axis $(x, y) \rightarrow (x, -y)$

b. Translate right 8 and up 3 $(x, y) \rightarrow (x+8, y+3)$

c. Dilate by a factor of 10 $(x, y) \rightarrow (10x, 10y)$

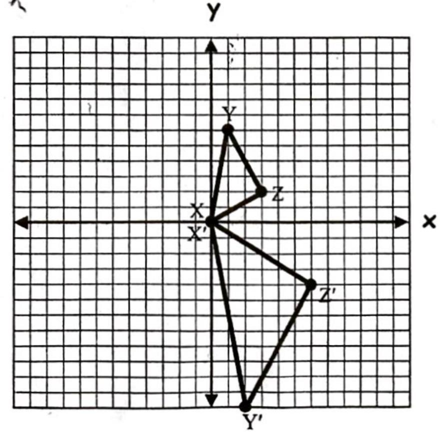
d. Reflect across the line y = x and dilate by a factor of 7 $(x, y) \rightarrow (7y, 7x)$

e. Dilate by a factor of 3 and translate down 5 and left 1
$(x, y) \rightarrow (3x-1, 3y-5)$

10. What does the coordinate rule $(x, y) \rightarrow (-y, -x)$ do? Use one of the figures from this lesson or make up your own figure to test your conjecture by using the rule.

reflect over line y=-x

11. Write a coordinate rule that would transform Figure XYZ into Figure X'Y'Z', and name the transformation(s).



$(x, y) \rightarrow (2x, -2y)$
reflect over x-axis
• dilate by factor of 2