9.4 Homework

Name: Key

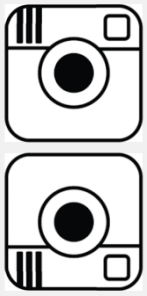
Part 1: Identify transformations: Let the pre-image be the picture on the left or on top (#4). Tell whether each transformation appears to be a reflection (over what type of line), translation, rotation (direction and degree), glide reflection, or none.

1) Reflection over vertical line

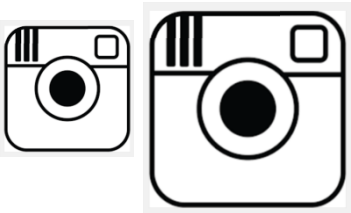
2) Rotation 90°

3) Rotation 180° or -180°

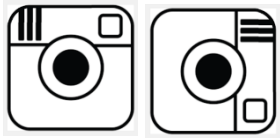
4) Reflection over horizontal line



5) none



6) Rotation -90°



7) Given △ABC, A (5, 0), B (1,0) and C (3, -4), rotate 90°, then reflect over the y-axis.

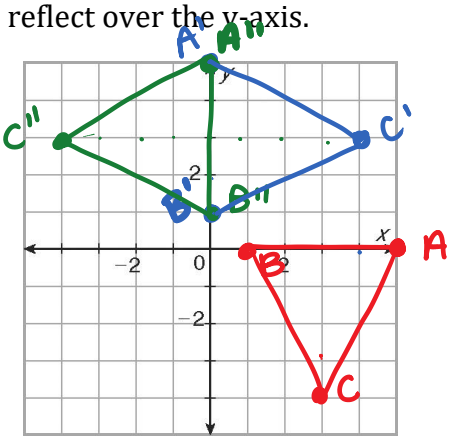
Step 1: Rotate 90 °

A' (0,5)
B' (0,1)
C' (4,3)

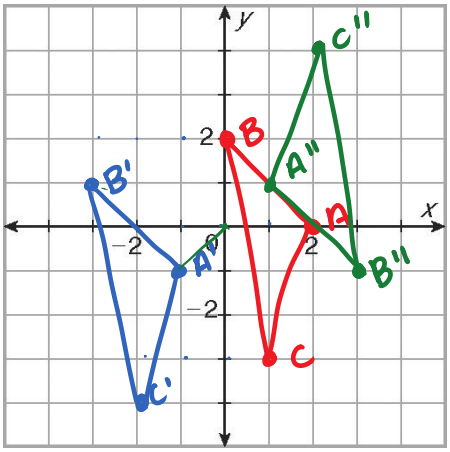
Step 2: Reflect over the y-axis

A'' (0,5)
B'' (0,1)
C'' (-4,3)

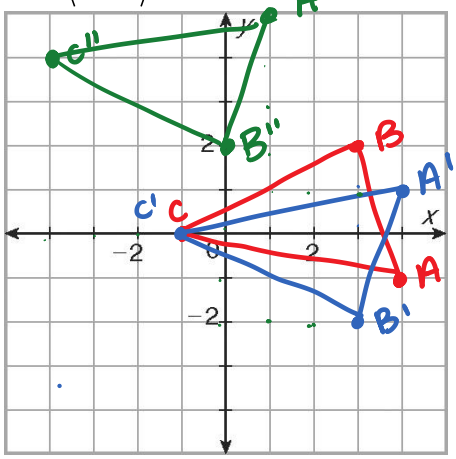
Step 3: Write final coordinates.



8) Given $\triangle ABC$, A (2,0), B (0,2) and C (1, -3), Translate by vector $\langle -3,-1\rangle$ then rotate 180°.



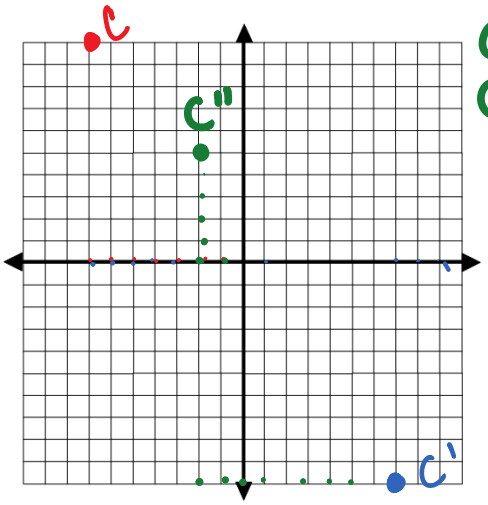
9) Given $\triangle ABC$, A (4,-1), B (3,2) and C (-1, 0), Reflect across the x axis then translate by vector $\langle -3,4\rangle$.



10) Point C (-7, 10) was mapped to point C''(-2, 5) first by a rotation of 180˚, and then by what translation vector?

C(-7, 10)
C'(7, -10)
C''(-2, 5)

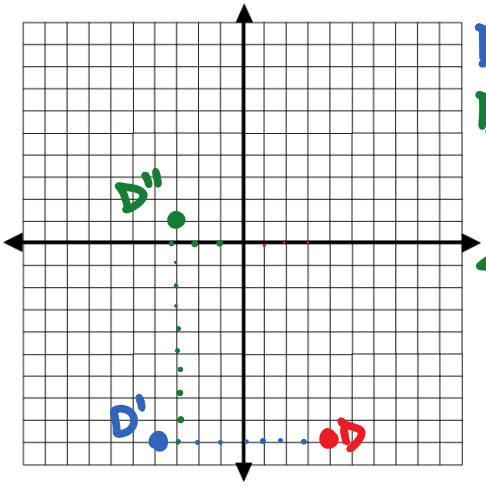
vector: <-9, 15>



11) Point D (4, -9) was mapped to point D'' (-3, 1) first by a reflection across the y-axis, and then by what translation vector?

D(4, -9)
D'(-4, -9)
D''(-3, 1)

vector: <1, 10>



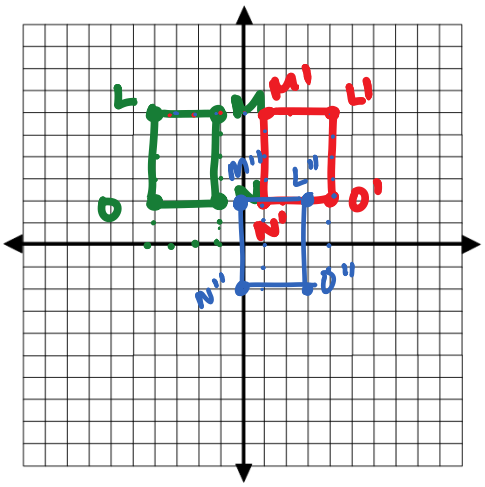
12) The points of rectangle are L(-4, 6), M(-1, 6), N(-1, 2) and O(-4, 2). The rectangle is first reflected across the y-axis and then translated down 4 units and to the left 1 unit. Which of the following are the correct coordinates of rectangle L'M'N'O'?

A) L'(3, 2), M'(0, -2), N'(0, 2), O'(3, -2)

B) L'(3, 2), M'(0, 2), N'(0, -2), O' (3, -2)

C) L'(-5, -10), M'(-2, -10), N'(-2, -6), O'(-5, -2)

D) L'(-5, -10), M'(0, -10), N'(-2, -2), O'(-5, -6)



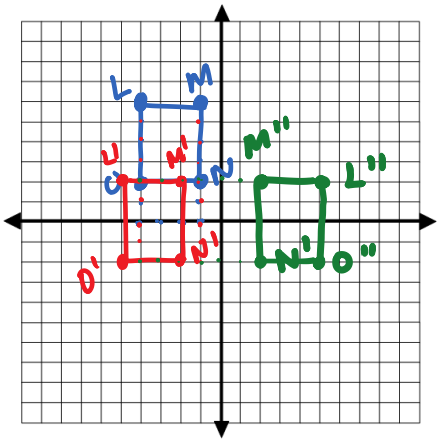
13) The points of rectangle are L(-4, 6), M(-1, 6), N(-1, 2) and O(-4, 2). The rectangle is first translated down 4 units and to the left 1 unit and then reflected across the y-axis. Are the coordinates of the new rectangle the same as the coordinates of L'M'N'O' in the previous question?

A) Yes, because the transformations are performed

B) No, because different transformations are performed

C) No, because the transformations are performed in a different order

D) Yes, because all transformations are rigid



14) Does the order in which you perform transformations matter? If yes, why so. If not, why not.