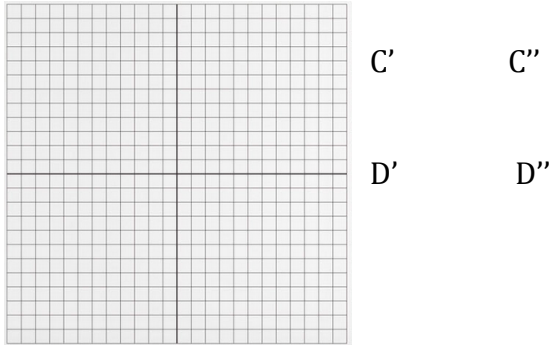


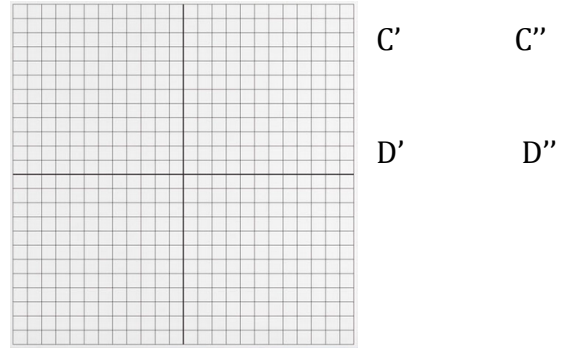
LEVEL: EMERGING

Directions: The endpoints of \overline{CD} are C (2, -5) and D(4, 0). Graph \overline{CD} . Give the coordinate of C'D' and C''D''. Then graph image of \overline{CD} after the glide reflection.

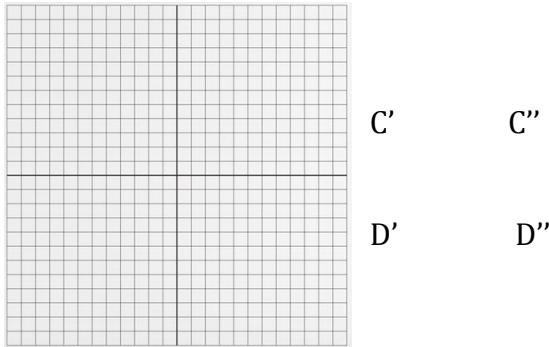
- 1) Translation: $(x, y) \rightarrow (x, y - 1)$
 Reflection in the y-axis



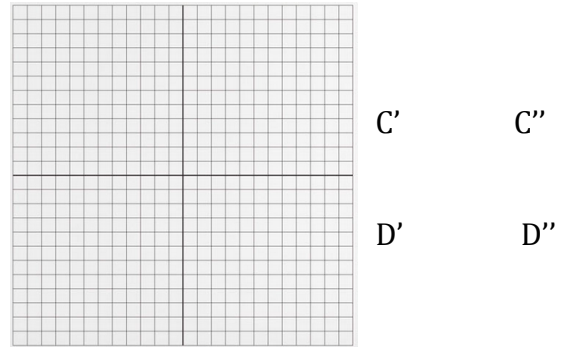
- 2) Translation: $(x, y) \rightarrow (x - 3, y)$
 Reflection in the y=-1



- 3) Translation: $(x, y) \rightarrow (x, y + 4)$
 Reflection in the x = 3



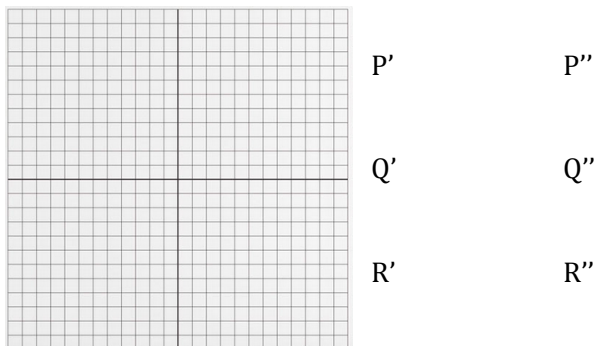
- 4) Translation: $(x, y) \rightarrow (x + 2, y + 2)$
 Reflection in the y = x



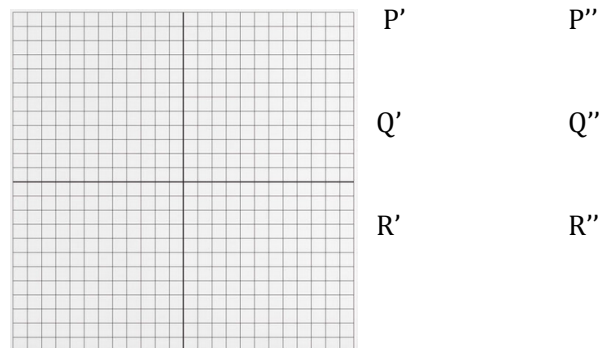
LEVEL: PROFICIENT

Directions: The vertices of ΔPQR are P(2, 4), Q(6, 0), and R(7, 2). Give the coordinates of $\Delta P'Q'R'$ and $\Delta P''Q''R''$. Graph the image of ΔPQR after a composition of transformations in the order they are listed.

- 5) Translation: $(x, y) \rightarrow (x + 2, y - 5)$
 Reflection in the y-axis

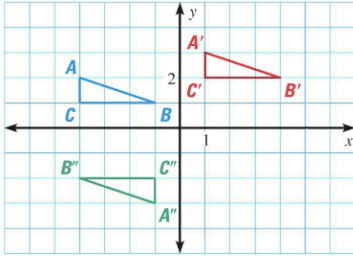


- 6) Translation: $(x, y) \rightarrow (x - 3, y + 2)$
 Rotation 90° clockwise about the origin



Directions: *Describe* the composition of transformations. Give the exact translation, reflection or rotation.

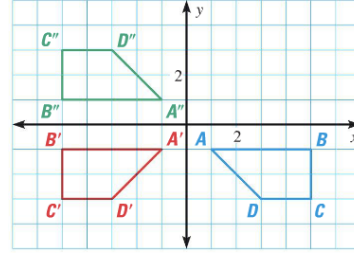
7)



Transformation 1:

Transformation 2:

8)



Transformation 1:

Transformation 2:

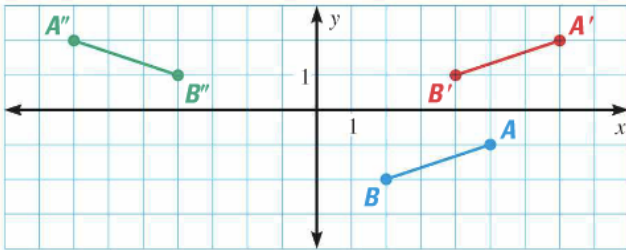
LEVEL: MASTERY

9) Can a glide reflection shift a point horizontally and reflect it across the y -axis? Draw an example.

10) In glide transformations, does gliding then reflecting, produce the same result as reflecting and then gliding? Draw an example.

11) Is a glide reflection of a triangle an isometry? Explain?

12) **ERROR ANALYSIS:** A student described the translation of \overline{AB} to $\overline{A'B'}$ followed by the reflection of $\overline{A'B'}$ to $\overline{A''B''}$ in the y -axis as a glide reflection. *Describe* and *correct* the student's error.



Describe the error:

Correct Work:

13) Line segment \overline{AB} has the coordinates of $A(-3, 2)$ and $B(-4, 6)$. The line segment is translated up 2 units and right 1 unit. Then the line segment is reflected over the x -axis. Find the coordinates of B'' . Then add the coordinates.

x-coordinate: _____ y-coordinate: _____

sum: _____

14) Line segment \overline{AB} has the coordinates of $A(4, 6)$ and $B(2, 0)$. The line segment is translated down 4 units and left 3 units. Then the line segment is reflected over the y -axis. Find the coordinates of A'' . Then add the coordinates.

x-coordinate: _____ y-coordinate: _____

sum: _____

Unit 2.3 Day 1 Worksheet Answers

1. $C'(2,-6)$, $D'(4,-1)$,
 $C''(-2,-6)$, $D''(-4,-1)$
2. $C'(-1,-5)$, $D'(1,0)$
 $C''(-1,3)$, $D''(1,-2)$
3. $C'(2,-1)$, $D'(4,4)$
 $C''(4,-1)$, $D''(2,4)$
4. $C'(4,-3)$, $D'(6,2)$
 $C''(-3,4)$, $D''(2,6)$
5. $P'(4,-1)$, $Q'(8,-5)$, $R'(9,-3)$
 $P''(-4,-1)$, $Q''(-8,-5)$, $R''(-9,-3)$
6. $P'(-1,6)$, $Q'(3,2)$, $R'(4,4)$
 $P''()$, $Q''()$, $R''()$
7. Transformation 1: $(x, y) \rightarrow (x + 5, y + 1)$
Transformation 2: 180° rotation cw or cww
8. Transformation 1: Reflection over the line $x = 0$ or Reflection over the line $y = 0$
Transformation 2: Reflection over the line $y = 0$ or Reflection over the line $x = 0$
9. Answers may vary
10. Answers may vary
11. Yes, each rigid motion produces a congruent triangle.
12. No error!
13. x-coordinate = -3, y-coordinate = -8, SUM = -11
14. x-coordinate = -1, y-coordinate = 2, SUM = 1