

Unit 1

Lesson 6

Composition of Transformations

Created with Doceri



Unit 1 – Geometric Transformations

Date _____ Pd _____

Lesson 7 – Compositions of Transformations

A **composition** is a sequence of transformations.

An example of a composition is a **glide reflection** since it is the composition of a reflection and a translation.

$A(2,1)$ $B(2,-3)$ $C(4,4)$

➤ **Composition of Motions with Algebraic Rules**

Using your algebraic rules, write a new rule after both transformations have taken place.

1) Translate a triangle 4 units right and 2 units up, and then reflect the triangle over the line $y = x$.

2) Rotate a triangle 90 degrees counterclockwise, and then dilate the figure by a scale factor of 3.

3) Translate a triangle 4 units left and 2 units down, and then reflect the triangle over the y -axis.

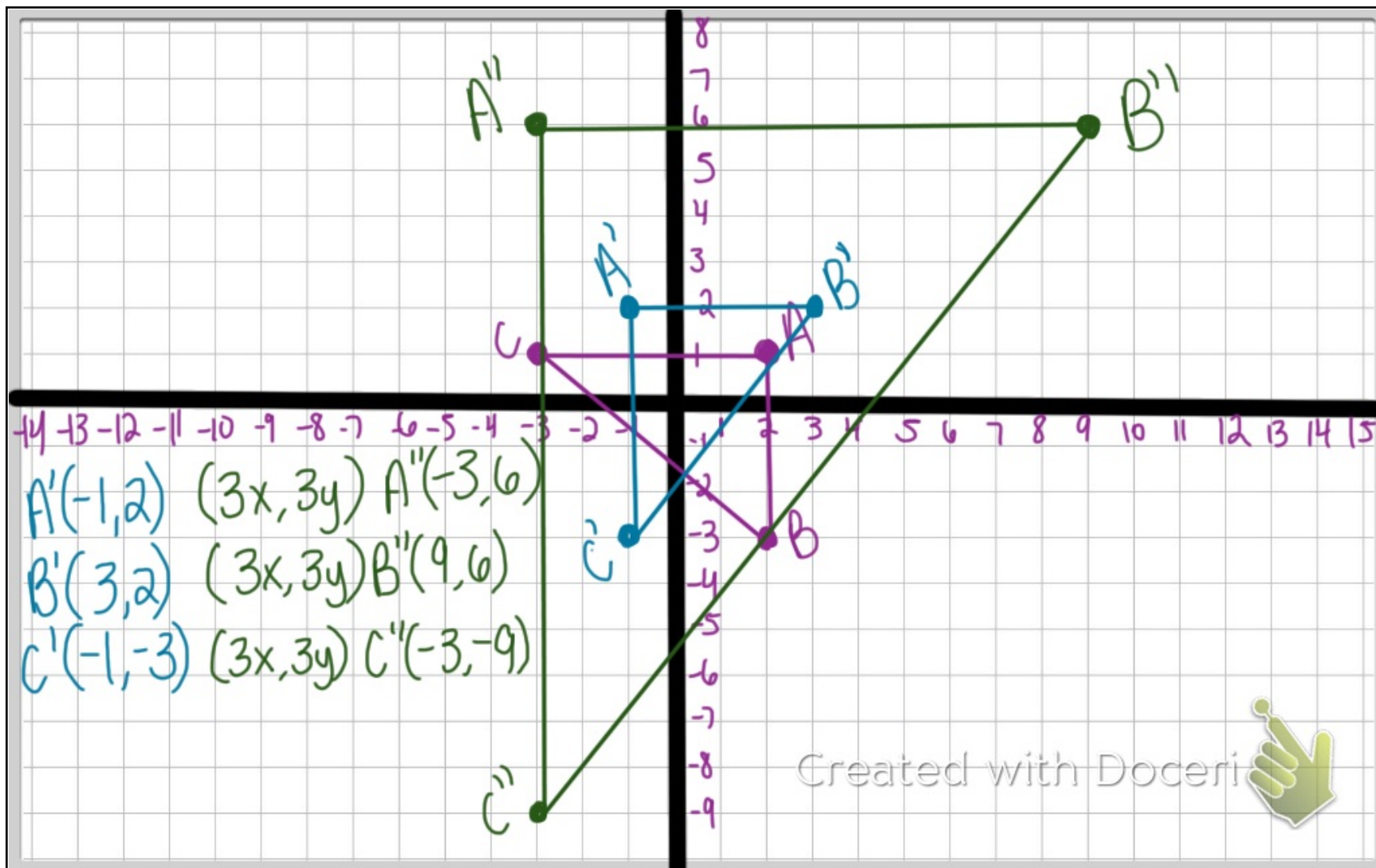
4) Rotate a triangle 90 degrees clockwise, and then dilate the figure by a scale factor of $\frac{1}{3}$.

$A(2,1)$ $B(2,-3)$ $C(-3,1)$

on second graph

Created with Doceri





$A(2,1) B(2,-3) C(-3,1)$

5) Translate a triangle 4 units right and 2 units down, and then reflect the triangle over the x -axis.

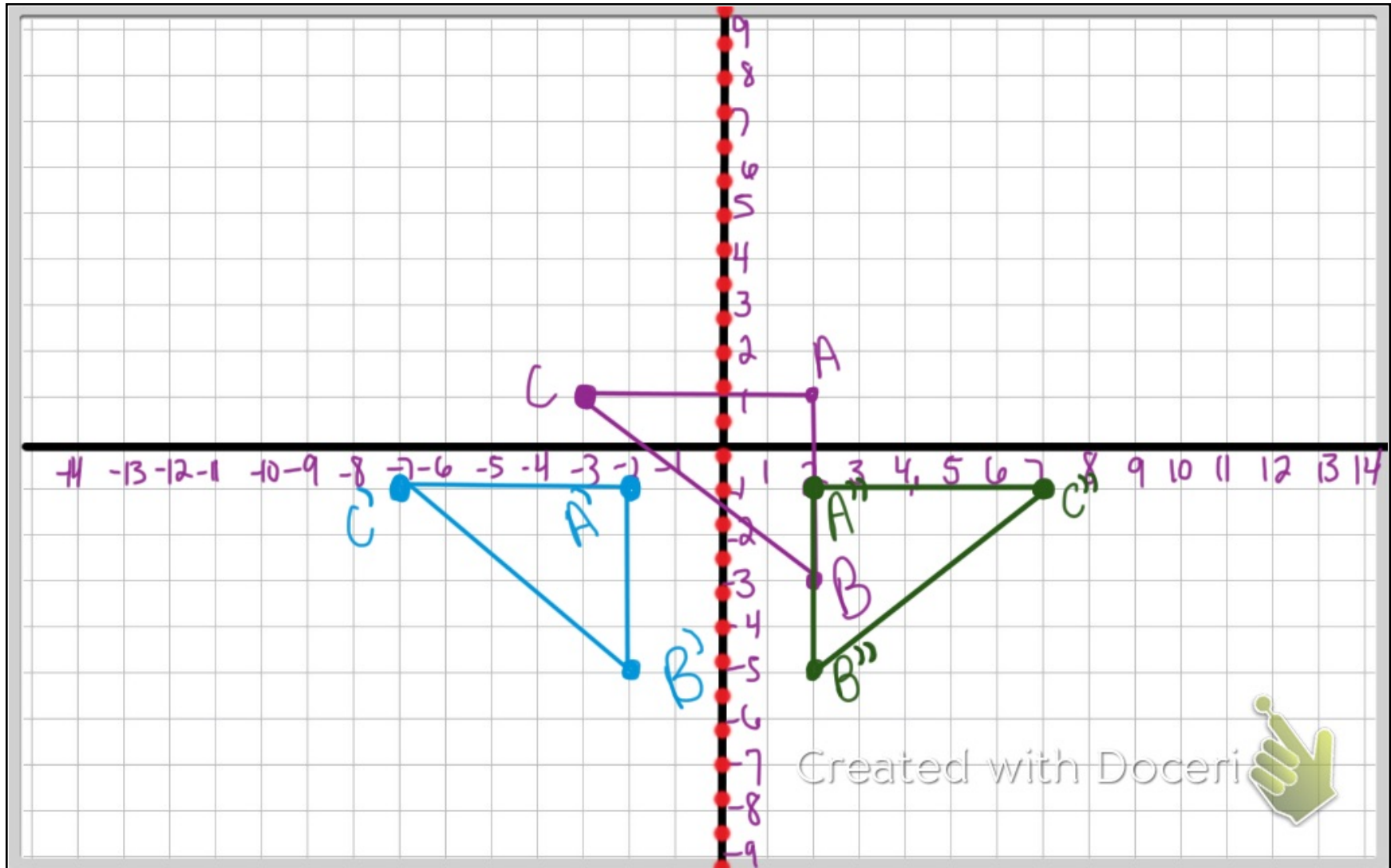
6) Rotate a triangle 180 degrees counterclockwise, and then dilate the figure by a scale factor of 2.

7) Translate a triangle 4 units left and 2 units up, and then reflect the triangle over the line $y = x$.

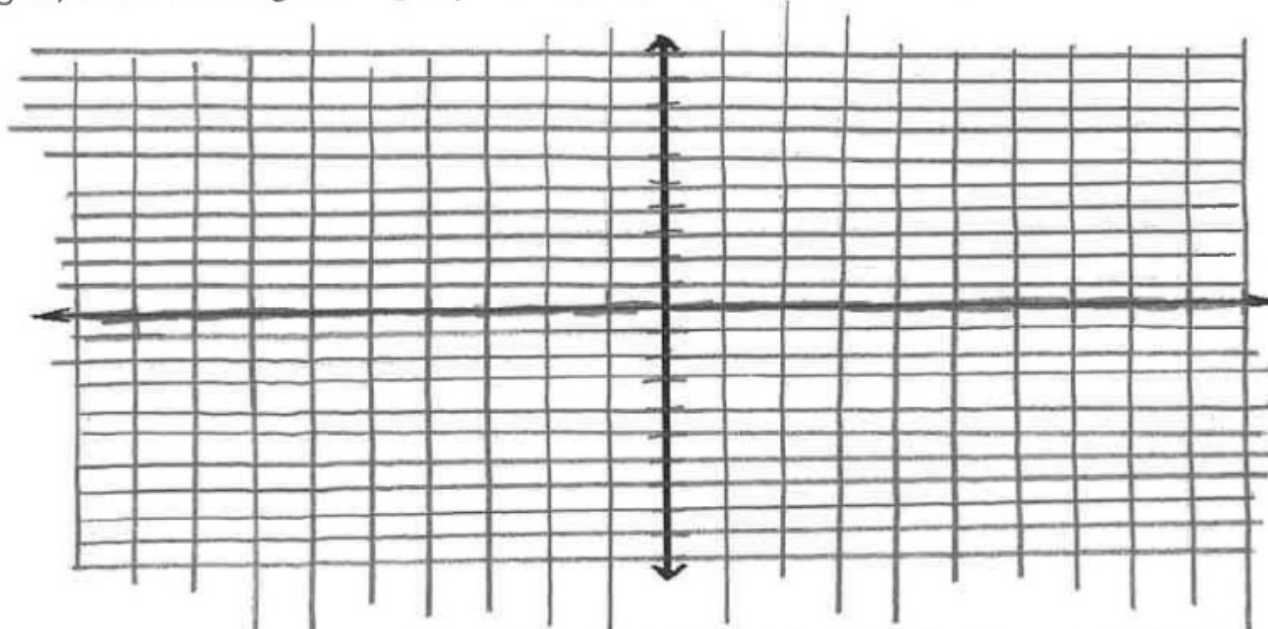
8) Rotate a triangle 180 degrees clockwise, and then dilate the figure by a scale factor of $\frac{1}{2}$.

Created with Doceri





b) a. On a coordinate grid, draw a triangle using $A(-9, -2)$, $B(-6, -1)$, $C(-6, -3)$ to represent a duck foot



b. Transform ΔABC using R_{x-axis} , followed by $T: (x, y) \rightarrow (x + 5, y)$. Label the final image $\Delta A'B'C'$.

c. Write a coordinate rule for this composite transformation.

d. Now apply the coordinate rule you gave in Part c two more times to $\Delta A'B'C'$.

Created with Doceri

