

# 4/30 Notes

## Combinations of Rigid Transformation Notes

Name \_\_\_\_\_

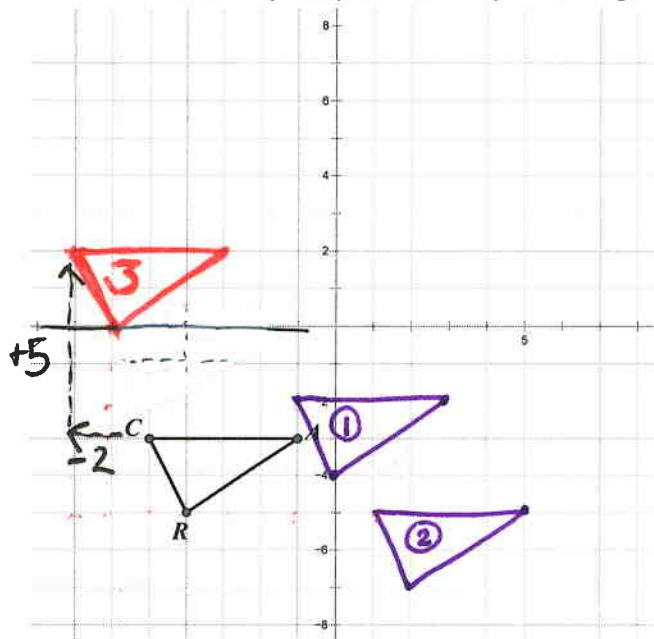
Date \_\_\_\_\_ Period \_\_\_\_\_

Ex1. Graph the following transformations:

To get  $A'R'C'$   $(x, y) \rightarrow (x+4, y+1)$

Followed by  $(x, y) \rightarrow (x+2, y-3)$  to get  $A''B''C''$

Followed by  $(x, y) \rightarrow (x-8, y+7)$  to get  $A'''B'''C'''$



Rewrite as a Single Coordinate Rule:

$ABC \rightarrow A'''B'''C'''$

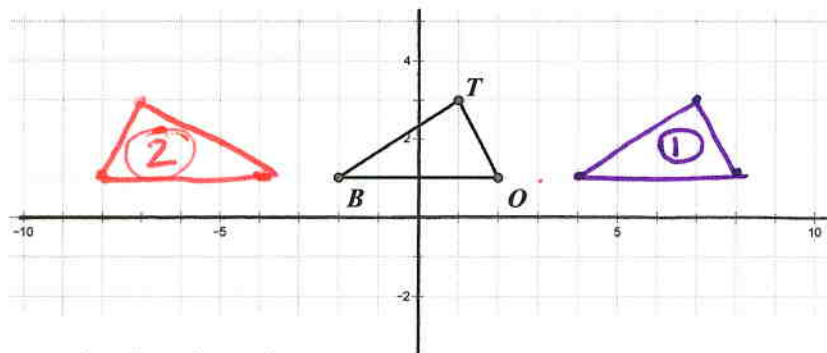
$$(x, y) \rightarrow (x-2, y+5)$$

follow point A

$(-1, 3)$	} Rule	$(x+4, y+1)$
$(3, -2)$		$(x+2, y-3)$
$(5, 5)$		$(x-8, y+7)$
$(-3, 2)$		<hr/>
$(x-2, y+5)$		$(x-2, y+5)$

same

Ex2.  $(x, y) \rightarrow (x+6, y)$  followed by  $(x, y) \rightarrow (-x, y)$



Rule

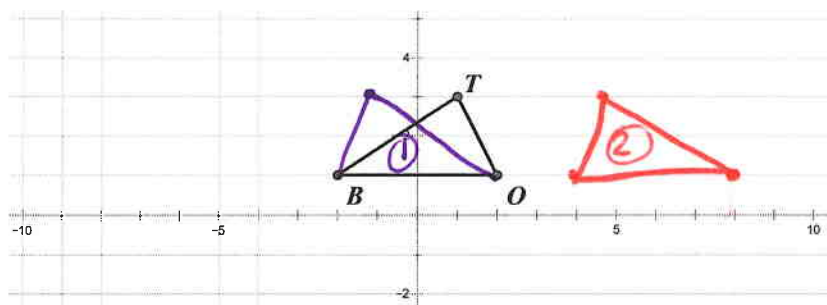
$B: (2, 1)$   $(x+6, y)$   
 $O: (8, 1)$   $(-(x+6), y)$   
 $O': (-8, 1)$

Single Transformation Rule:

$$(-(x+6), y)$$

add first,  
then negative

Ex3.  $(x, y) \rightarrow (-x, y)$ , followed by  $(x, y) \rightarrow (x+6, y)$ .



Rule

$O: (2, 1)$   
 $O': (-2, 1)$   $(-x, y)$   
 $O'': (4, 1)$   $(-x+6, y)$

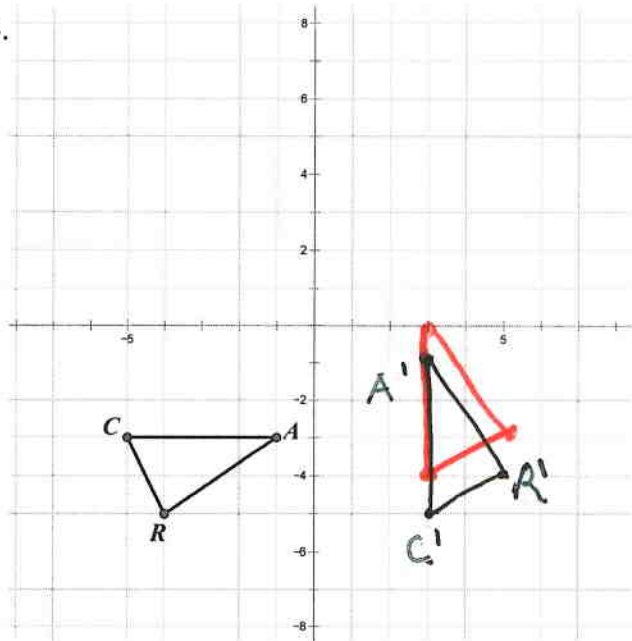
Single Transformation Rule:

$$(-x+6, y)$$

negative first  
then add

\*  $-(x+6) \neq -x+6$

Ex4.



Rotate 270 degrees clockwise  
 $(x, y) \rightarrow (-y, x)$

then translate up 1.  
 $(x, y) \rightarrow (-y, x+1)$

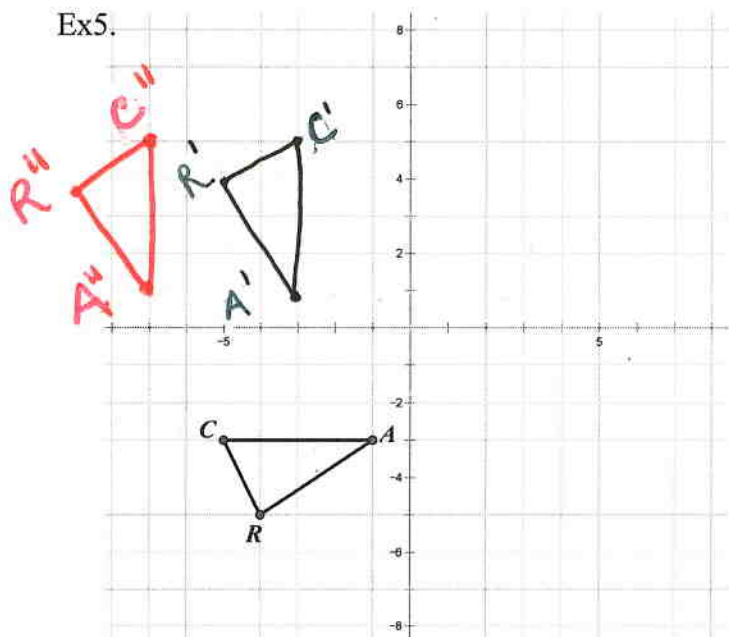
$ABC \rightarrow A''B''C''$

Single Transformation Rule:

$$(x, y) \rightarrow (-y, x+1)$$

$R: (-4, 5) \rightarrow (x, y)$   
 $R': (5, -4) \rightarrow (-y, x)$   
 $R'': (5, -3) \rightarrow (-y, x+1)$

Ex5.



ARC to A'R'C' rotate 90 degrees clockwise  
 $(x, y) \rightarrow (y, -x)$

A'R'C' to A''R''C'' then translate left 3.  
 $(x, y) \rightarrow (y, -x-3)$

$ABC \rightarrow A''B''C''$

Single Transformation Rule:

$$(x, y) \rightarrow (y, -x-3)$$