

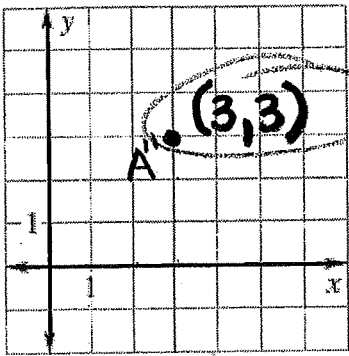
Worksheet 9.5 Composite Transformations Prep Name Key

Graph the image of $A(1, -3)$ after the described glide reflection.

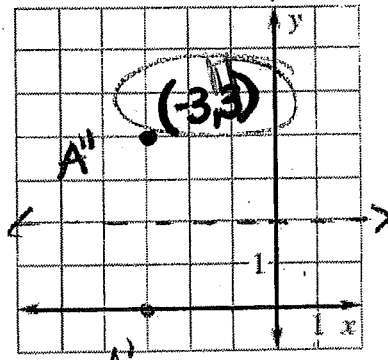
- 1) Translation: $(x, y) \rightarrow (x + 2, y)$ Reflection: in the x -axis
 2) Translation: $(x, y) \rightarrow (x - 4, y + 3)$ Reflection: in $y = 2$
 3) Translation: $(x, y) \rightarrow (x - 3, y + 2)$ Reflection: in $x = 2$

Translation $\rightarrow (1+2, -3) \rightarrow (3, -3)$ Reflection $\rightarrow (3, 3)$
 Translation $\rightarrow (1-4, -3+3) \rightarrow (-3, 0)$ Reflection $\rightarrow (-3, 3)$

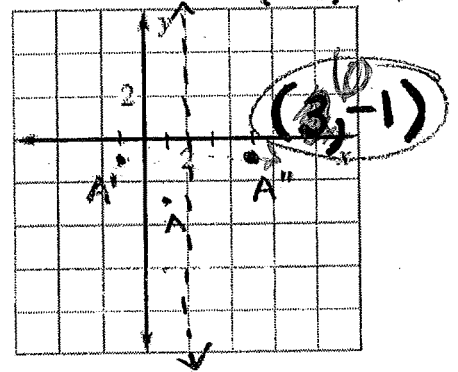
Translation $\rightarrow (1-3, -3+2) \rightarrow (-2, -1)$



A A'

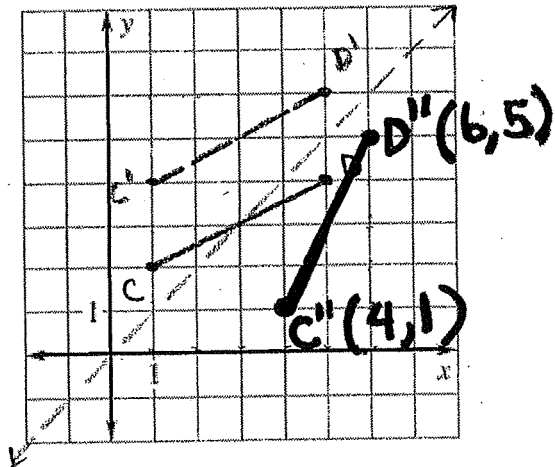
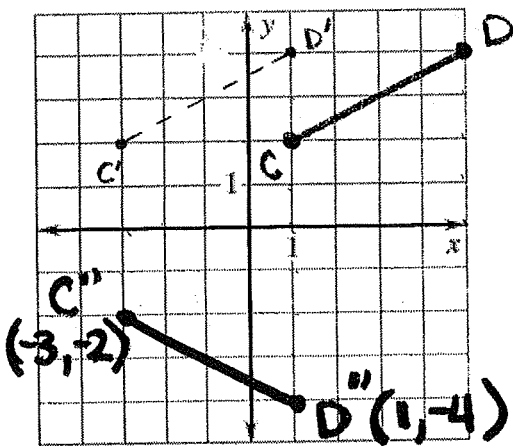


A'' A

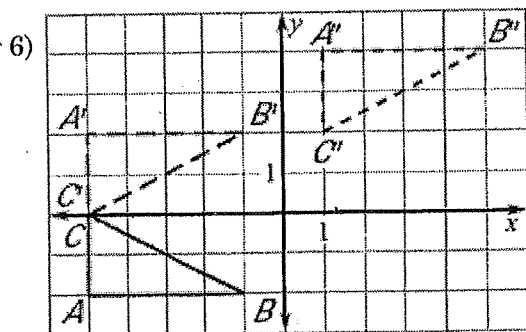


The endpoints of \overline{CD} are $C(1, 2)$ and $D(5, 4)$. Graph the image of \overline{CD} after the glide reflection.

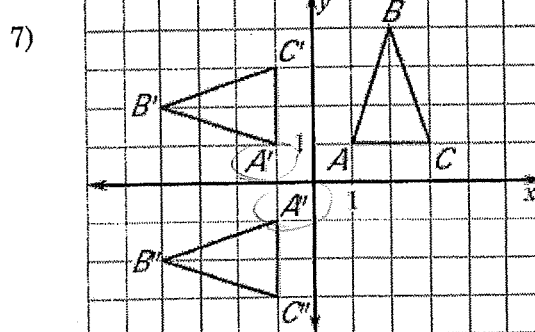
- 4) Translation: $(x, y) \rightarrow (x - 4, y)$ Reflection: in x -axis $C'(-3, 2)$ $D'(1, 4)$
 5) Translation: $(x, y) \rightarrow (x, y + 2)$ Reflection: in $y = x$ $C'(1, 4)$ $D'(5, 6)$



Describe the composition of the transformations.



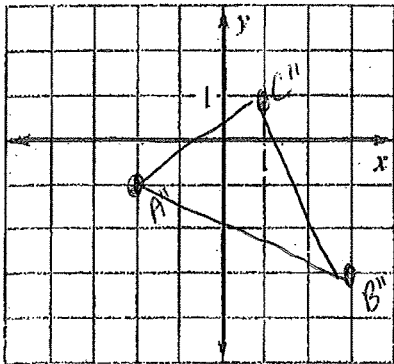
Reflected over the x -axis then translated up 2 and right 1.



Rotated 90° about the origin then reflected over the x -axis
 (can't translate b/c of where image A, B, C are)

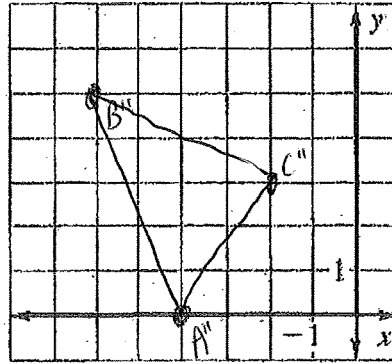
The vertices of $\triangle ABC$ are $A(2,4)$, $B(7,6)$, and $C(5,2)$. Graph the image of $\triangle ABC$ after a composition of the transformations in the order they are listed.

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



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

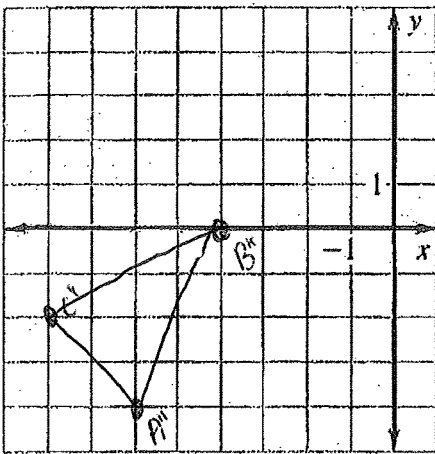
- 9) Translation: $(x,y) \rightarrow (x-2, y)$
Rotation: 90° about the origin



$A' : (0, 4)$
 $B' : (5, 6)$
 $C' : (3, 2)$
 $A'' : (-4, 0)$
 $B'' : (-6, 5)$
 $C'' : (-2, 3)$

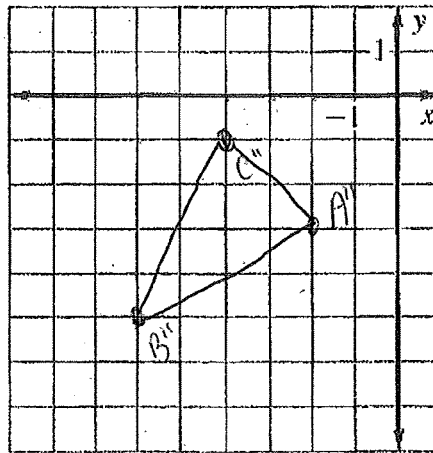
The vertices of $\triangle ABC$ are $A(3,1)$, $B(1,5)$, and $C(5,3)$. Graph the image of $\triangle ABC$ after a composition of the transformations in the order they are listed.

- 10) Translation: $(x,y) \rightarrow (x+3, y-5)$
Reflection: in the y -axis



$A' : (6, -4)$
 $B' : (4, 0)$
 $C' : (8, -2)$
 $A'' : (-6, -4)$
 $B'' : (-4, 0)$
 $C'' : (-8, -2)$

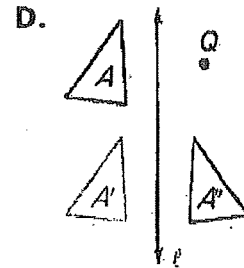
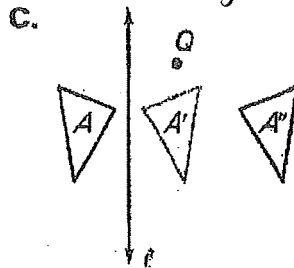
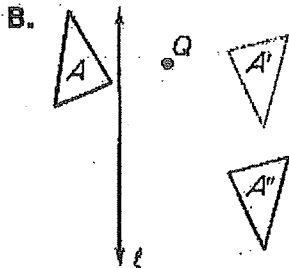
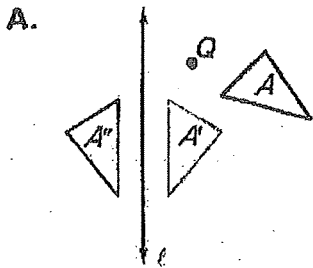
- 11) Translation: $(x,y) \rightarrow (x-6, y+1)$
Rotation: 90° about the origin



$A' : (-3, 2)$
 $B' : (-5, 6)$
 $C' : (-1, 4)$
 $A'' : (-3, 3)$
 $B'' : (-6, 5)$
 $C'' : (-4, 1)$

Match the composition with the diagram.

* Make sure to go $A \rightarrow A' \rightarrow A''$ *



- 12) Translate parallel to ℓ then reflect in ℓ .

- 13) Rotate about Q , then translate parallel to ℓ .

- 14) Rotate about Q , then reflect in ℓ .

- 15) Reflect in ℓ , then translate perpendicular to ℓ .

D

B

A

C