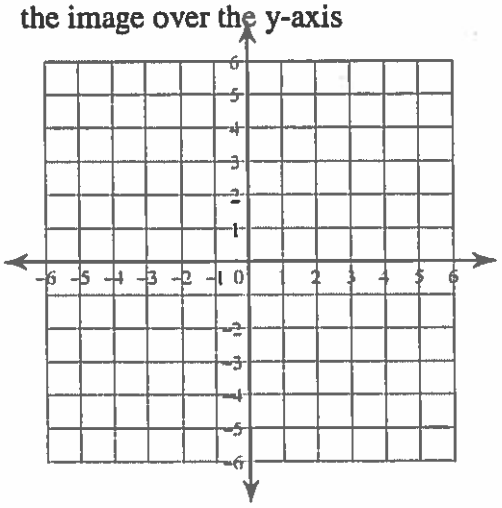
Geometry – Multiple Transformations Due 11/06 Name: _____

8) Now we are going to explore if the order in which you to multiple transformations matters.

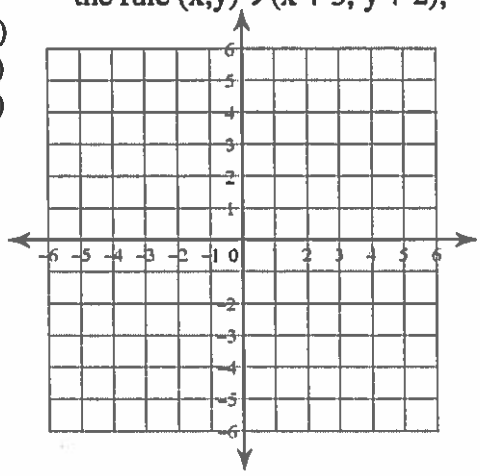
a) Translate ΔALT if A(-5,-1), L(-3,-2), T(-3,2) by the rule $(x,y) \rightarrow (x + 3, y + 2)$, then reflect the image over the y-axis



A' (____,____)
L' (____,____)
T' (____,____)

A''(____,____)
L''(____,____)
T''(____,____)

b)Reflect ΔALT if A(-5,-1), L(-3,-2), T(-3,2) over the y-axis, then translate the image by the rule $(x,y) \rightarrow (x + 3, y + 2)$,



A'(___,___)
L'(___,___)
T'(___,___)

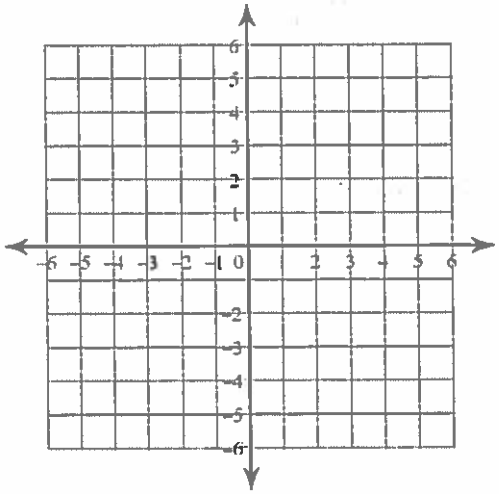
A''(___,___)
L''(___,___)
T''(___,___)

Did the order you did the transformations change the final image?

So, does order matter?

What about with rotations and reflections?

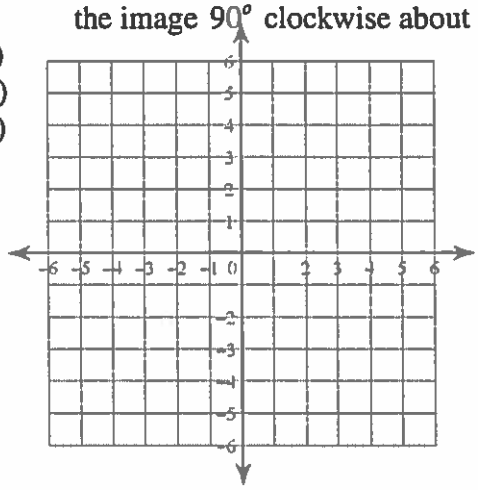
c) Rotate ΔTAB if T(2,3), A(1,1), B(4,-3) 90^o clockwise about the origin, then reflect the image over the line x-axis.



T' (____,____)
A' (____,____)
B' (____,____)

T''(____,____)
A''(____,____)
B''(____,____)

d)Reflect ΔTAB if T(2,3), A(1,1), and B(4,-3) over the x-axis, then rotate the image 90^o clockwise about the origin,



T'(___,___)
A'(___,___)
B'(___,___)

T''(___,___)
A''(___,___)
B''(___,___)

Did the order you did the transformations change the final image?

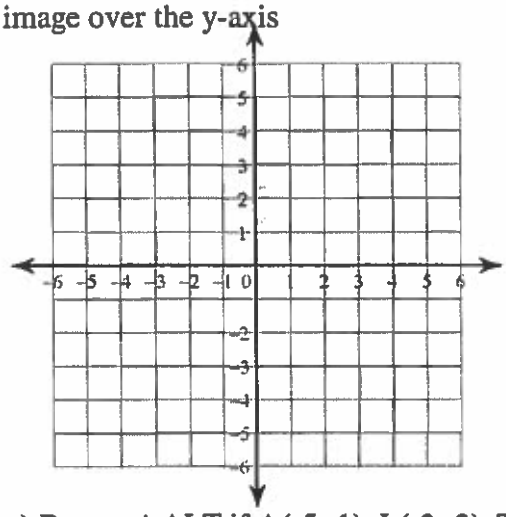
So, does order matter?

So, if you want to get the correct answer, should you do the transformations in the order given?

6) Also notice that on the previous page, when we did two transformations, the first image had one prime notation (one `), and the second image (after the second transformation) has two prime notations (``). This is the notation we are going to use.How many transformations would have been applied to a figure if it had four prime notations? (````)?

7) Now you are going to try some multiple transformations:

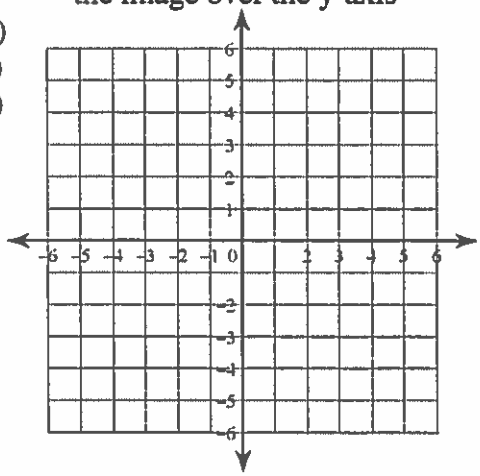
a) Translate ΔALT if A(-5,-1), L(-3,-2), T(-3,2) by the rule $(x,y) \rightarrow (x+6, y-3)$, then reflect the image over the y-axis



A' (____,____)
L' (____,____)
T' (____,____)

A''(____,____)
L''(____,____)
T''(____,____)

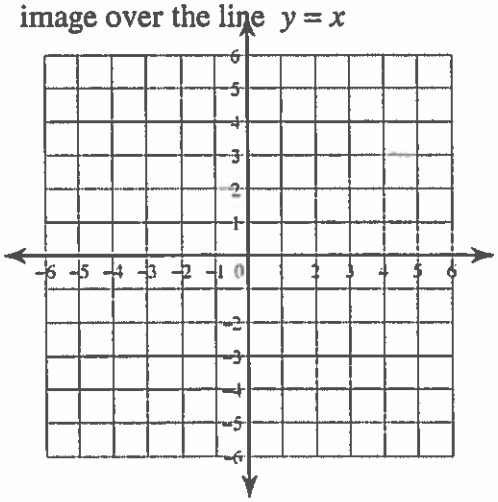
b)Reflect ΔTAB if T(2,3), A(1,1), and B(4,-3) over the x-axis, then reflect the image over the y-axis



T'(____,____)
A'(____,____)
B'(____,____)

T''(____,____)
A''(____,____)
B''(____,____)

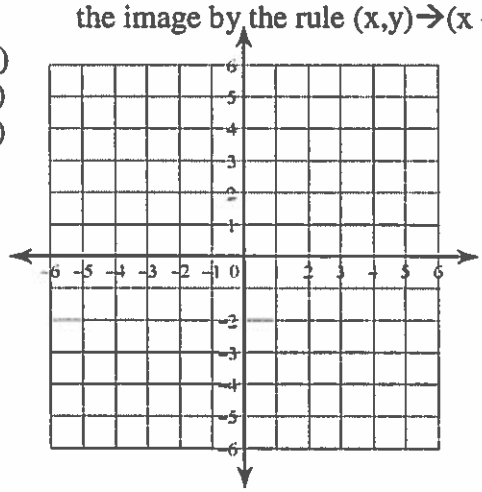
c) Rotate ΔALT if A(-5,-1), L(-3,-2), T(-3,2) 90° clockwise about the origin, then reflect the image over the line $y = x$



A' (____,____)
L' (____,____)
T' (____,____)

A''(____,____)
L''(____,____)
T''(____,____)

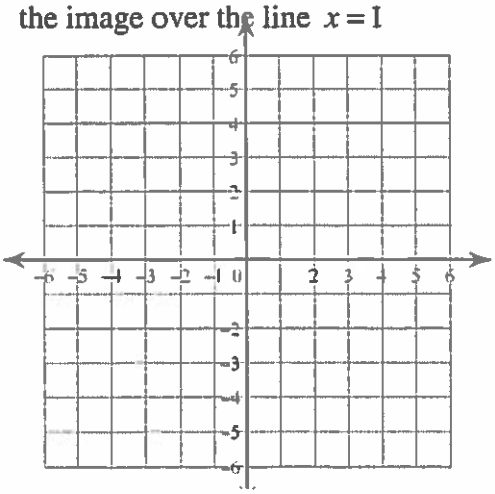
d)Reflect ΔTAB if T(2,3), A(1,1), and B(4,-3) over the y-axis, then translate the image by the rule $(x,y) \rightarrow (x+2, y-1)$



T'(____,____)
A'(____,____)
B'(____,____)

T''(____,____)
A''(____,____)
B''(____,____)

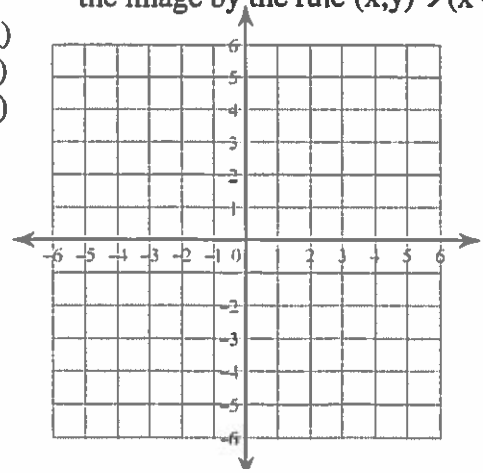
e) Rotate ΔALT if A(-5,-1), L(-3,-2), T(-3,2) 180° clockwise about the point (-1,-1), then reflect the image over the line $x = 1$



A' (____,____)
L' (____,____)
T' (____,____)

A''(____,____)
L''(____,____)
T''(____,____)

f)Reflect ΔTAB if T(2,3), A(1,1), and B(4,-3) over the line y = 2, then translate the image by the rule $(x,y) \rightarrow (x-5, y-4)$



T'(____,____)
A'(____,____)
B'(____,____)

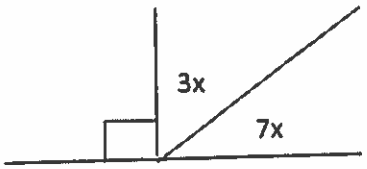
T''(____,____)
A''(____,____)
B''(____,____)

Name: _____ Date: _____

REVIEW

Make sure you know everything about translations, reflections, and rotations!

1. Find the value of x. Write out an explanation.



2. How do you write translations mathematically?

X		Y	

a) Left 4 Up 3

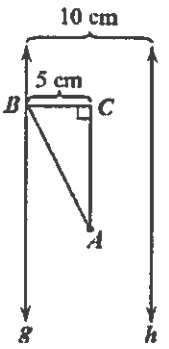
b) Right 2 Up 7

c) Left 3 Down 5

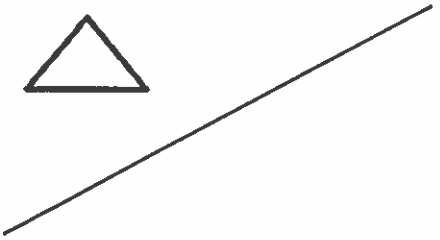
d) Left 6 Down 8

3. Look up the word ISOMETRY on page 397.
   a. An isometry is a _____
   _____
   _____
   _____.
   b. Are translations, reflections, and rotations rigid transformations?
   c. So after performing one of these transformations can you say that the shapes are congruent? Why?

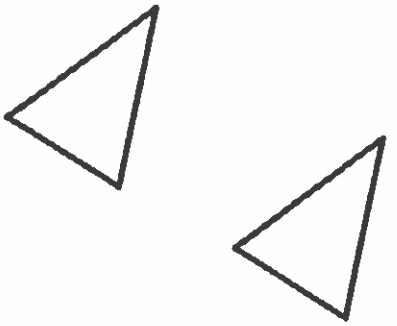
4. The figure ABC is reflected across line g, and its image is reflected across line h. That is the distance from line g to the final image of point C?



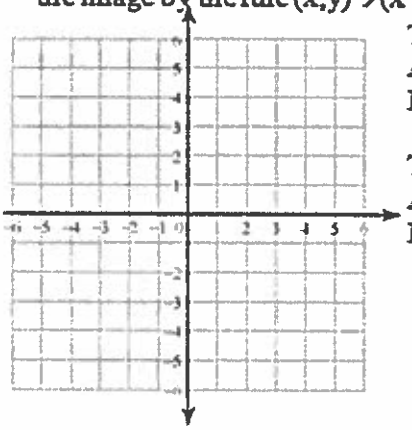
5. Reflection across the line.



6. Construct the line of reflection



7. d)Reflect ΔTAB if T(2,3), A(1,1), and B(4,-3) over the y-axis, then translate the image by the rule $(x,y) \rightarrow (x+2, y-1)$



T'(___,___)
A'(___,___)
B'(___,___)

T''(___,___)
A''(___,___)
B''(___,___)