Name:_____ Period:_____ Date:_____

Thanksgiving 4.1-4.3 Review

Directions: Get this done in class, but if you run out of time, it is due the next class after thanksgiving. This is everything you should know from unit 4 to this point.

1. **True/False** A translation is an isometry.
2. **True/False** A rotation is an isometry
3. **True/False** A reflection is an isometry
4. The vector $\langle 3,-1\rangle$ describes the translation of $K(2x-1,\ 8)$ onto $K'(10,\ 4y-5)$. Find the values of x and y.

$2x-1+3=10$

$2x-1=7$

$2x=8$

$x=4$

$8-1=4y-5$

$7=4y-5$

$12=4y$

$\frac{12}{4}=\frac{4y}{4}$

$y=3$

5. The point A is translated using the rule (x, y) →(x + 5, y – 3) resulting in the image $A'(5,4)$. Find the coordinates of point A.

$(x,y)\rightarrow(5,4)$

$x+5=5$

$x=0$

$y-3=4$

$y=7$

6. Graph quadrilateral ABCD with endpoints A(2, 2), B(4,2), C(4, 0) and D(2, 0), the line of reflection, and its image after the composition. (Note: When you rotate, you are rotating the image after reflecting over y = -x, not the pre-image.)

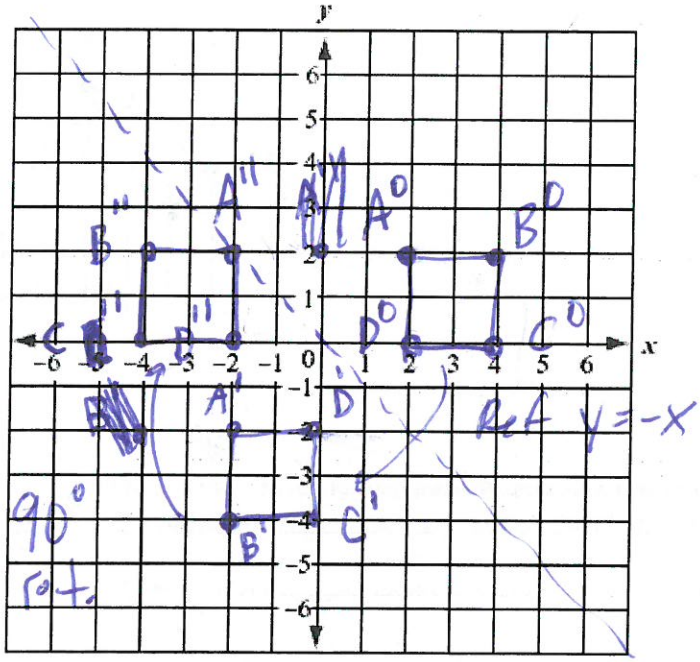
$(a,b)\rightarrow(-b,-a)$

Reflection: over the line $y=-x$

Rotation: 90° about the origin

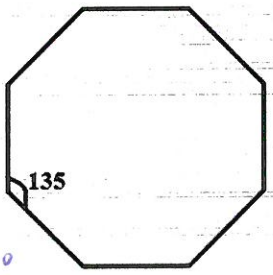
Clockwise

$(a,b)\rightarrow(b,-a)$



7. Do the following figures have rotational symmetry? If yes, what degree(s) measure?

a.

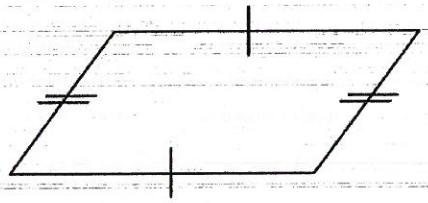


A regular octagon

$\frac{360}{8} = 45°$

$45°, 90°, 135°, 180°, 225°, 270°, 315°$

b.



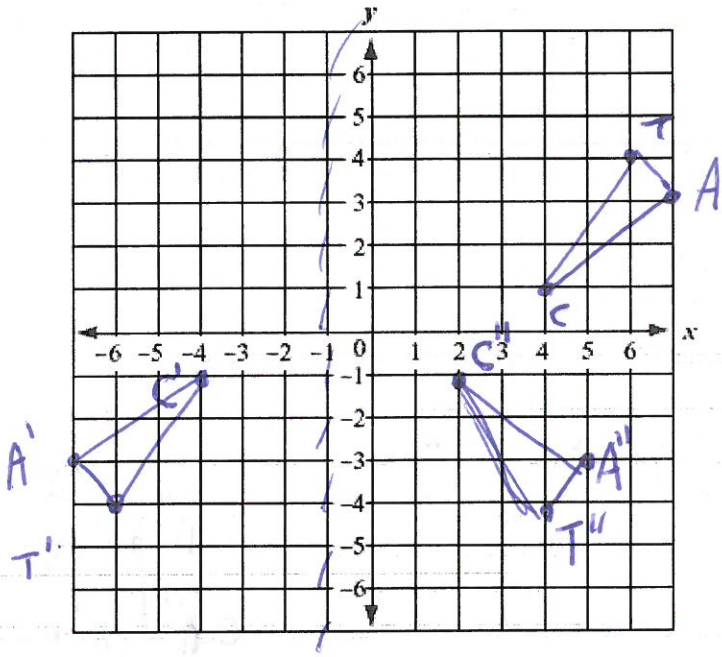
$180°$

8. Graph ΔCAT with vertices C(4, 1), A(7, 3), and T(6, 4) and its image after the glide reflection. Be sure to clearly label your final image and place the coordinates of its vertices on the lines provided.

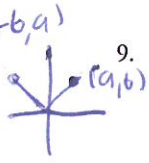
$(a,b) \rightarrow (-a,-b)$

Rotation: 180 degrees about (0,0)

Reflection: over $x = -1$



9. Record the coordinates after each part of the composition of transformations on segment A(-2, 3) B(0, 7)



a) 90 degree counterclockwise rotation about the origin. A'(-3 , -2) B' (-7 , 0)

b) Reflect over the x-axis. A"(-3 , 2) B" (-7 , 0)

c) Reflect over x = 0. A"'(3 , 2) B"'(7 , 0)

d) 180 degree rotation about the origin. A""(-3 , -2) B""(-7 , 0)

e) Reflect over y = - x. A"""(2 , 3) B"""(0 , 7)

f) Translate along the vector <-3, 4> A""""(-1 , 7) B""""(-3 , 11)