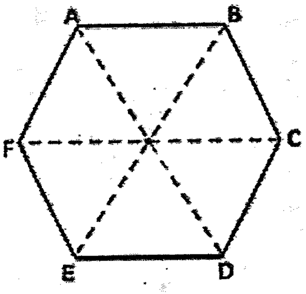
Name Key

# Symmetry Classwork

60
6)360




A clockwise rotation of how many degrees would map vertex A onto vertex E?

240°

60×4= 240°

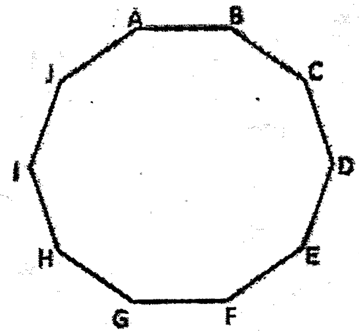
Where would vertex D end up after a rotation of 120 degrees clockwise?

E

Where would vertex A end up after a clockwise rotation of 396°? 36° B

How many degrees of a rotation would map vertex F onto vertex J? (clockwise)

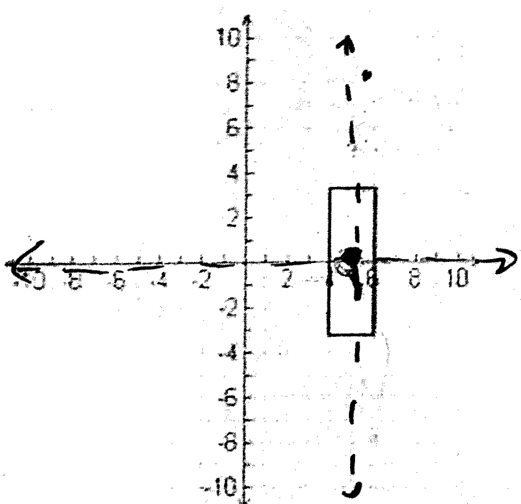
10)360




Decagon

144°

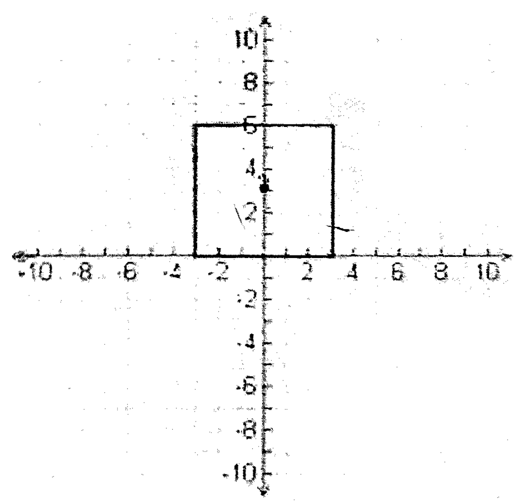
Come up with as many transformations as you can that maps each figure onto itself. (look for lines of symmetry and rotations about a point)




Reflection across $x=5$

Reflection across $y=0$

Rotation 180° around (5,0)




Rotate 90° around (0,3)

Rotate 180° around (0,3)

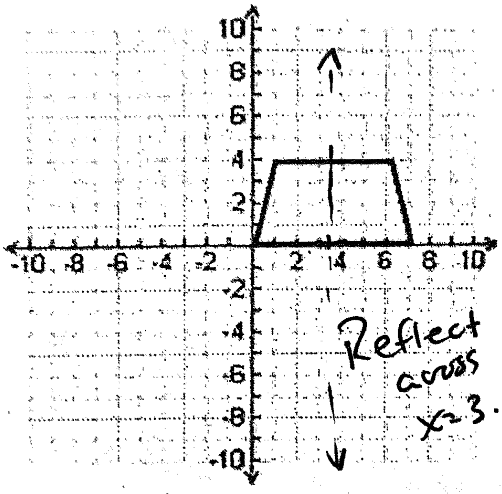
Rotate 270° around (0,3)

Reflect across $y=x+3$

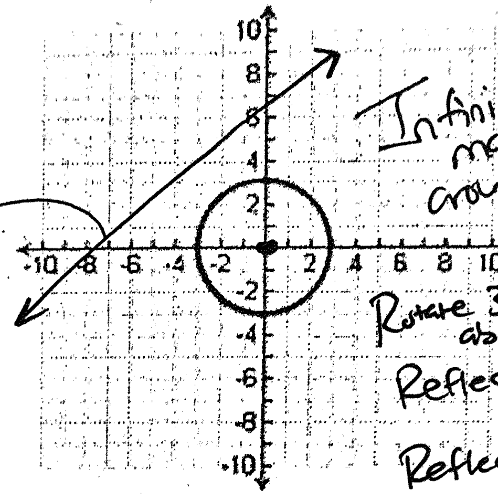
Reflect across $y=-x+3$

Reflect across $x=0$

Reflect across $y=3$



Reflect across $x=3.5$



This does not work

Infinite many rotations around (0,0) & lines through (0,0)

Rotate 359° about (0,0)

Reflect across $y=0$

Reflect across $x=0$

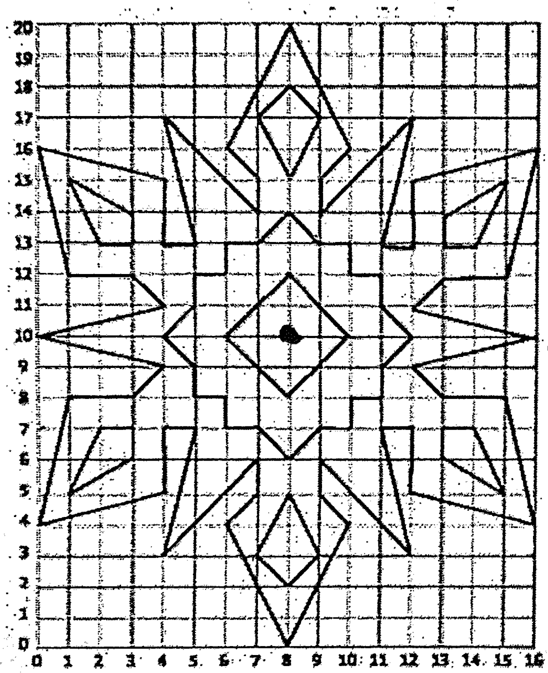
Reflect across $y=x$

Reflect across $y=-x$

Reflect across ~~x=3~~ $y=2x$

Reflect across $y=2x$

Reflect across $y=2x$

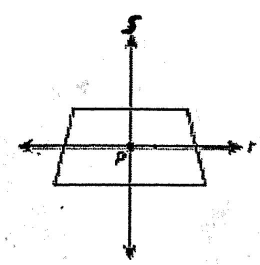


Reflect across $x=8$

Reflect across $y=10$

Rotation 180° about (8,10)

The figure shows two perpendicular lines, $s$ and $r$, intersecting at point $P$ in the interior of a trapezoid. Line $r$ is parallel to the bases and bisects both legs of the trapezoid. Line $s$ bisects both bases of the trapezoid.




Which transformation will always carry the figure onto itself?

Select all that apply.

- a reflection across line $r$
- a reflection across line $s$
- a rotation of 90° clockwise about point $P$
- a rotation of 180° clockwise about point $P$
- a rotation of 270° clockwise about point $P$

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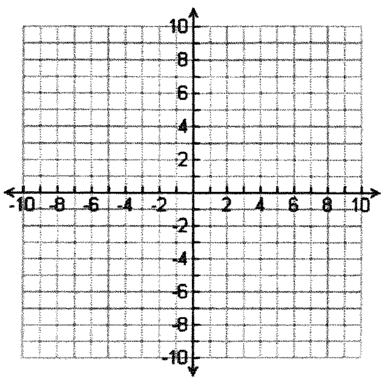
# Symmetry Homework

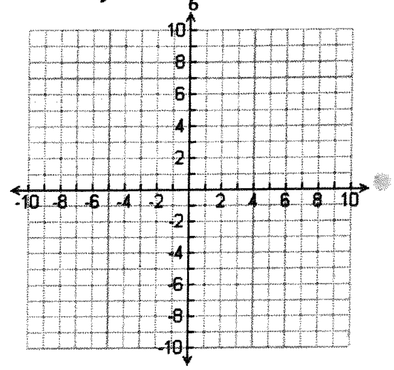
Use one graph for two problems.

Graph the following (Review).

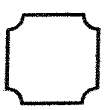
1. $y = -5x + 3$
2. $y = x + 6$



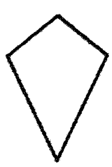
3. $y = \frac{5}{4}x + 3$
4. $y = -\frac{1}{6}x$



Tell whether each figure appears to have line symmetry, rotational symmetry, both, or neither. If line symmetry, tell how many lines of symmetry. If rotational symmetry, give the angle of rotational symmetry.

5. 

7. 

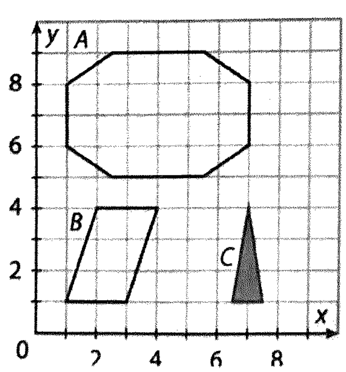
6. 

8. 

9. How many lines of symmetry does a regular pentagon have? ________

10. How many lines of symmetry does a regular hexagon have? ________

Use the figures on the grid to answer Problems 11–13.




11. What are the equation(s) of the lines of symmetry for figure *A*?

______________________________

______________________________

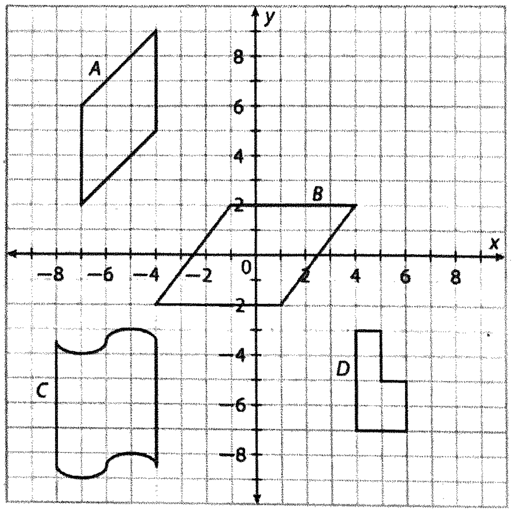
12. Does figure *B* have line symmetry, rotational symmetry, or both?

______________________________

13. What are the equation(s) of the lines of symmetry for figure *C*? ______________________

Name ______________________ Date ____________ Class ____________

**Use the figures on the grid to answer questions 14 -16.**




14. Does figure $D$ have line symmetry, rotational symmetry, both, or neither? Explain your answer.

______________________________

______________________________

15. What are the equations of the lines of symmetry for figure $B$?

$y =$ __________ $y =$ __________

16. Describe the symmetry of figure $C$.

______________________________

______________________________

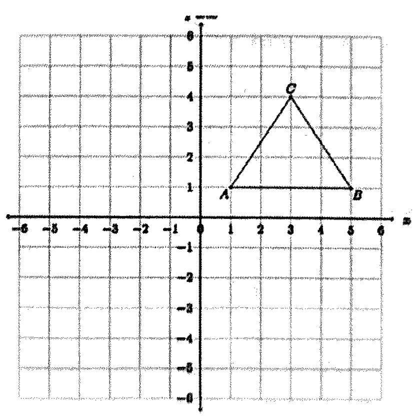
17. Use the figure below.

a. Draw the image of the triangle under the transformation $(x, y) \rightarrow (x - 2.5, y - 5.5)$.. Write the coordinates of $A'$, $B'$, and $C'$.

______________________________

b. Draw the line of symmetry for the figure **after the transformation.** Then write an equation for it.

______________________________




GO BACK AND REVIEW SEQUENCES OF TRANSFORMATIONS!

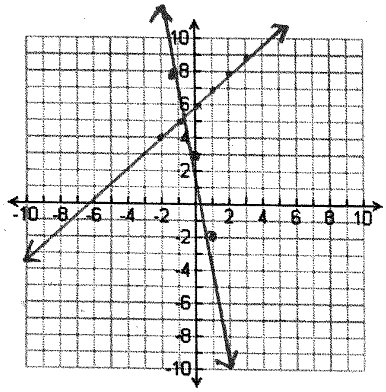
Name Key Date ______ Class ______

# Symmetry Homework

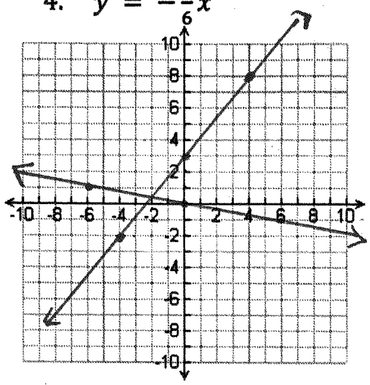
Use one graph for two problems.

Graph the following (Review).

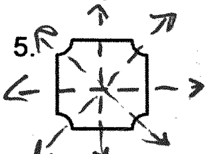
1. $y = -5x + 3$
2. $y = x + 6$



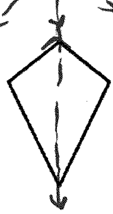
3. $y = \frac{5}{4}x + 3$
4. $y = -\frac{1}{6}x$



Tell whether each figure appears to have line symmetry, rotational symmetry, both, or neither. If line symmetry, tell how many lines of symmetry. If rotational symmetry, give the angle of rotational symmetry.

5. 

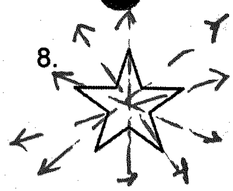
4 lines of symmetry
90°, 180°, 270° rotational symmetry

6. 

1 line of symmetry
no rotational symmetry

7. 

no line symmetry
180° rotational symmetry

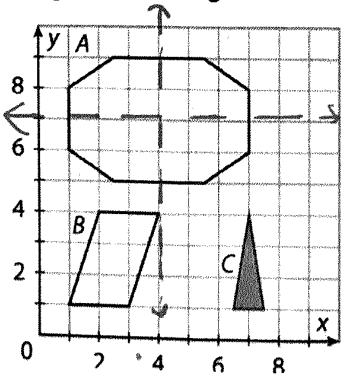
8. 

5 lines of symmetry
72°, 144°, 216°, 288° rotational symmetry

9. How many lines of symmetry does a regular pentagon have? 5

10. How many lines of symmetry does a regular hexagon have? 6

Use the figures on the grid to answer Problems 11–13.



11. What are the equation(s) of the lines of symmetry for figure *A*?

$x = 4$, $y = 7$

12. Does figure *B* have line symmetry, rotational symmetry, or both?

rotational symmetry 180°

13. What are the equation(s) of the lines of symmetry for figure *C*? $x = 7$

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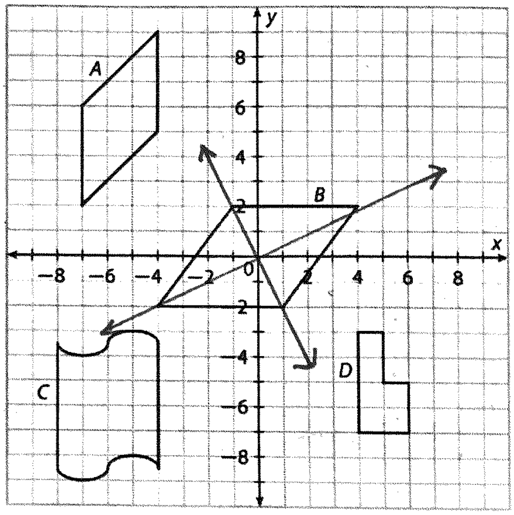
**Use the figures on the grid to answer questions 14 -16.**




14. Does figure *D* have line symmetry, rotational symmetry, both, or neither? Explain your answer.

neither - there are no lines to reflect across because it is bigger at the bottom
No rotational symmetry because there are no congruent parts/sides

15. What are the equations of the lines of symmetry for figure *B*?

$y =$ $-2x$ $y =$ $\frac{1}{2}x$

16. Describe the symmetry of figure *C*.

rotational 180° around (-6, -6)
no line symmetry

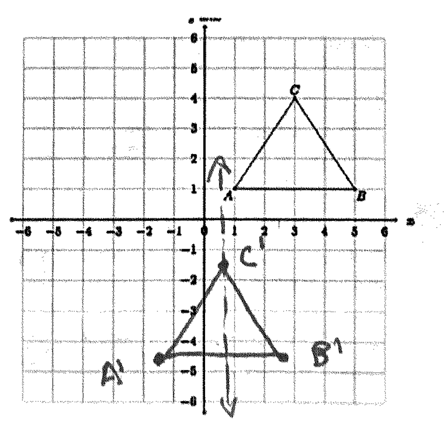
17. Use the figure below.

a. Draw the image of the triangle under the transformation $(x, y) \rightarrow (x - 2.5, y - 5.5)$.. Write the coordinates of *A'*, *B'*, and *C'*.

A' (-1.5, -4.5) B' (2.5, -4.5) C' (0.5, -1.5)

b. Draw the line of symmetry for the figure **after the transformation.** Then write an equation for it.

X=0.5

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