UNIT 7: TRANSFORMATIONS

HOMEWORK REVIEW HELP!

Review for Unit Test

1. Identify the coordinates of the pre-image and the image. State the line of reflection and the general rule for the reflection.

I do:

A (-1,4) → A' (1,4)

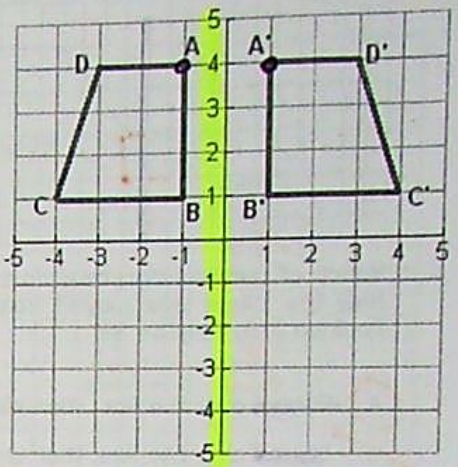
B (-1,1) → B' (1,1)

C (-4,1) → C' (4,1)

D (-3,4) → D' (3,4)

Line of reflection: y-axis

General rule: (x,y) → (-x,y)



What is the area of the pre-image?
Formula: Work:

2. Identify the coordinates of the pre-image and the image. State the line of reflection and the general rule for the reflection.

You do:

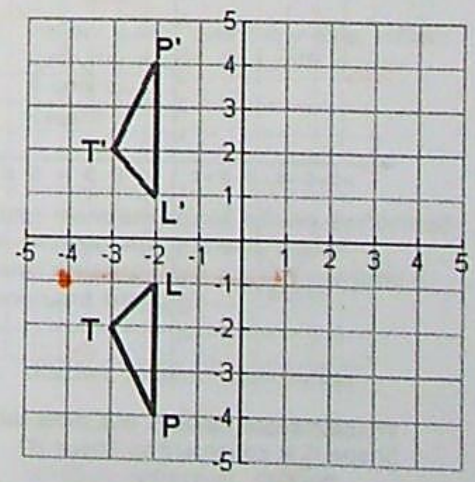
P _____ → P' _____

L _____ → L' _____

T _____ → T' _____

Line of reflection: _____

General rule: _____



What is the area of the pre-image?
Formula: Work:

Homework is continued on the next page.

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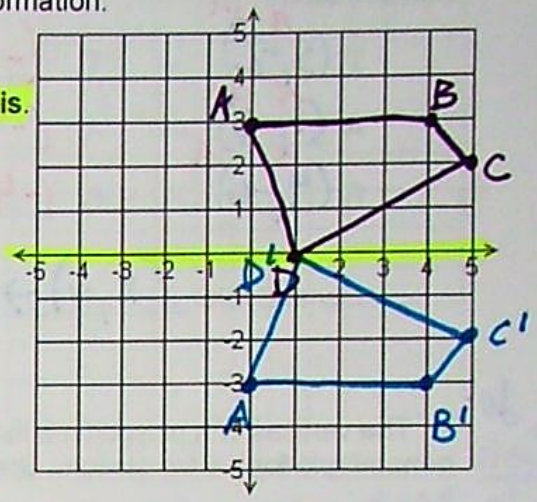
Graph and label each polygon. Reflect the pre-image over the given line. Name the coordinates of the image. State the rule for the transformation.

I do:

3. Reflect over **y = 0.** This is also named the **x-axis.**



A (0, 3) → A' (0, -3)

B (4, 3) → B' (4, -3)

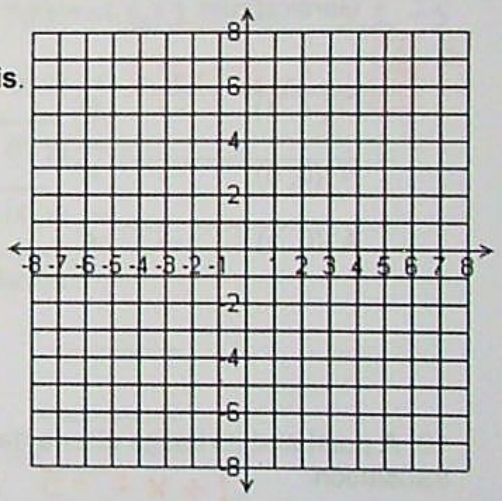
C (5, 2) → C' (5, -2)

D (1, 0) → D' (1, 0)

General rule: $(x, y) \rightarrow (x, -y)$

You do:

4. Reflect over **x = 0.** This is also named the **y-axis.**



P (-7, 2) → P' _____

O (-6, -6) → O' _____

L (-1, -2) → L' _____

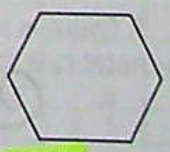
General rule: _____

Draw all of the **lines of symmetry** for each figure. If the figure does not have reflectional (or line) symmetry, write "none."

5.

6.

7.



(Hint: This is a regular hexagon.)

all sides and angles congruent

Homework is continued on the next page.

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slide

I do:

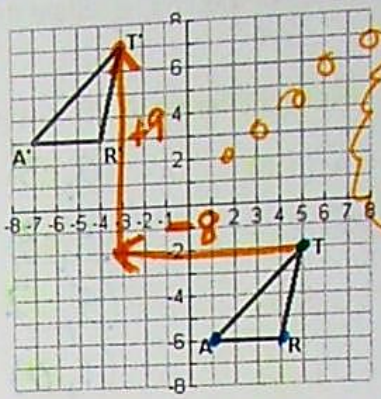
8. Name the coordinates of the pre-image and its image. State the general rule for the transformation.

T (5, -2) → T' (-3, 7)

A (1, -6) → A' (-7, 3)

R (4, -6) → R' (-4, 3)

General rule: $(x, y) \rightarrow (x-8, y+9)$



8 left (x)
9 up (y)

You do:

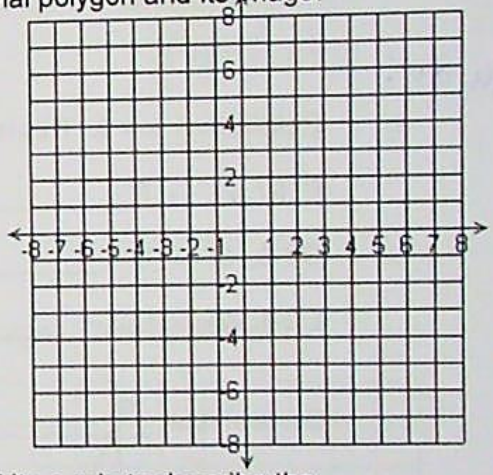
9. The vertices of a polygon are listed. Name the coordinates of the image given the general rule for the translation. Graph and label the original polygon and its image.

General rule: (x, y) → (x + 3 , y)

D (-4, 1) → D' _____

R (0, 6) → R' _____

A (0, 1) → A' _____



10. A point and its image after a translation are given. Write a rule to describe the translation.

$1 + x = -5$, -1, $x = -6$ $\quad -5 + y = -2$, $+5$, $y = 3$

a. The translation that takes A (1, -5) to A' (-5, -2) (x, y) → $(x-6, y+3)$

Your turn!

b. The translation that takes B (7, -3) to B' (7, -8) (x, y) → _____

11. A figure is moved on a coordinate plane the number of units indicated below. Write a general rule for the transformation.

a. 3 units down (y) and 5 units to the right (x) General rule: $(x, y) \rightarrow (x+5, y-3)$

b. 2 units left and 1 unit up

Your turn!

General rule: _____

Homework is continued on the next page.

HOMEWORK REVIEW HELP!

12. a. Plot and label these points:
A(1, 1); B(-1, -1); C(1, 2)

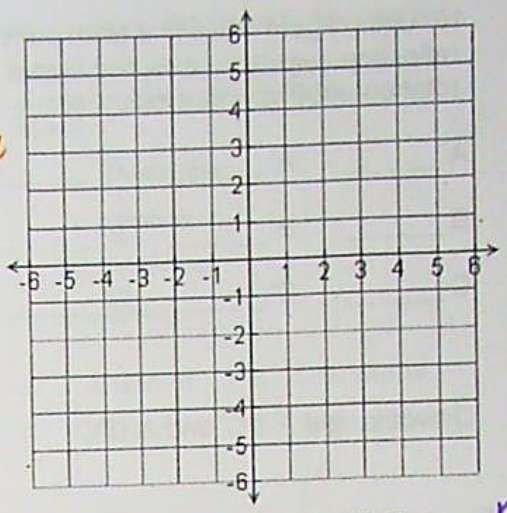
b. Using the following transformation
(x, y) → (3x, 3y) Dilation - enlarge

Write the new coordinates:

A' _____ B' _____ C' _____

c. Plot the new points.

d. Name the scale factor: 3



13. A point and its image after a dilation are given. Write a rule to describe the dilation. new / old

a. The dilation that takes A (1, -5) to A' (5, -25) (old, new) (x, y) → (5x, 5y) 5/1 · -25/-5

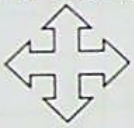
b. The dilation that takes B (4, 20) to B' (1, 5) (old, new) (x, y) → $(\frac{1}{4}x, \frac{1}{4}y)$ 1/4 5/20

Your turn!

c. The dilation that takes C (-27, -9) to C' (-9, -3) (x, y) → _____

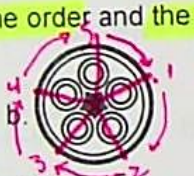
d. The dilation that takes D (2, 8) to D' (4, 16) (x, y) → _____

14. For each figure state the order and the angle of rotation.

a. 

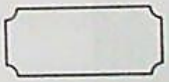
Order: ____

Angle : _____

b. 

Order: 5

Angle : 72° 360/5

c. 

Order: ____

Angle : _____

15. The vertices of a polygon are listed. Graph and label the polygon and its image after a given rotation. Name the coordinates of the image.

Help with rule — you finish it!

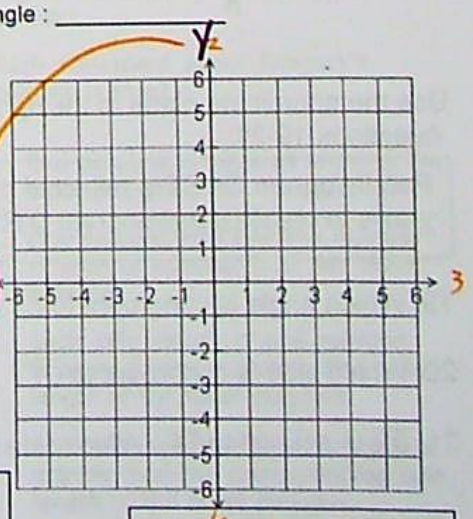
Rotate figure CDE about the origin 90° counterclockwise.

C (0, 1) → C' _____

D (-2, 6) → D' _____

E (-4, 1) → E' _____

Y-X



Write the general rule: (x, y) → (-y, x)

Homework is continued on the next page.