1) $9x^4 \cdot 8x^7 =$

$9 \cdot 8 \cdot x^4 \cdot x^7$

$72x^{11}$

8.EE.1

2) Is $\sqrt{81}$ a rational or an irrational number?

$\sqrt{81} = 9$

8.NS.1

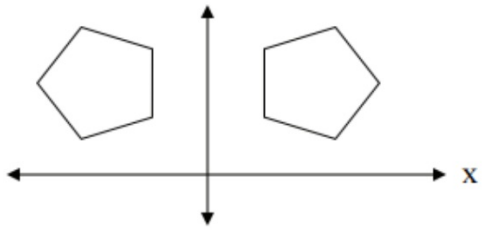
3) Write 0.0000000009 using a single digit times an integer power of 10.

(Scientific Notation)

9×10^{-10}

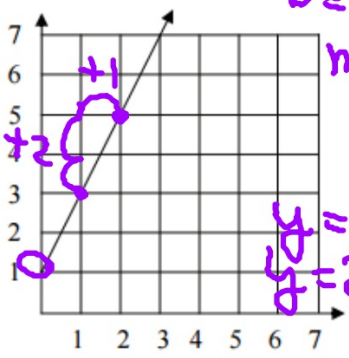
8.EE.3

4) What term describes the transformation shown below?



reflection over the y-axis 8.G.2

5) Derive the equation, in the form y = mx + b, for the line.



$b = 1$

$m = \frac{\Delta y}{\Delta x} = \frac{2}{1} = 2$

$y = mx + b$

$y = 2x + 1$

Homework Check

#1b. #4

k for Understanding

sent Similarity with Proportions: Investigation 2

termine whether each statement is true or false. *Circle true or false.*

A. Congruent figures have the same shape, but not necessarily the same size.

True False

B. Congruent figures have a scale factor of 1.

True False

C. If rigid motion transformations and a dilation with any scale factor other tha map a pre-image to an image, then the figures are similar but not congruen

True False

After a dilation, $\overline{Q'R'}$ is the image of $\overline{QR}$. Match each set of segment lengths with t appropriate scale factor.

A. $QR = 18$ units, $Q'R' = 6$ units III $18\left(\frac{1}{3}\right)=6$ **I.** 2.5

B. $QR = 6$ units, $Q'R' = 24$ units IV $6(4)=24$ **II.** $3\frac{2}{3}=\frac{11}{3}$

C. $QR = 4$ units, $Q'R' = 10$ units I $4(2.5)=10$ **III.** $\frac{1}{3}$

D. $QR = 3$ units, $Q'R' = 11$ units II $3\left(\frac{11}{3}\right)=11$ **IV.** 4

An equilateral triangle with sides of 8 centimeters is dilated in reference to the orig order to form an equilateral triangle that has sides 4 centimeters in length. If (a, b) point on the original triangle, which are the coordinates of the corresponding point the triangle that has been dilated?

A. ~~$\left(-\frac{1}{2}a, -\frac{1}{2}b\right)$~~

B. $\left(\frac{1}{2}a, \frac{1}{2}b\right)$

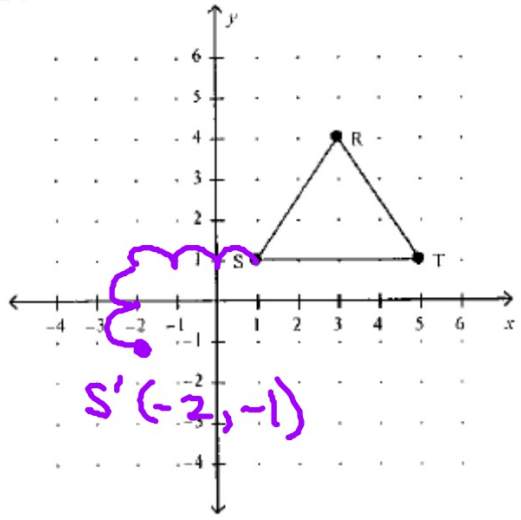
C ~~$(2a, 2b)$~~

D. ~~$(-2a, -2b)$~~

Describe the relationship between two figures that are similar. The correspondi
$\angle$'s are $\cong$, the lengths differ by a scale factor.

e image and label with letters. Then, identify the
the choice that best completes the statement or
the question.

1. Translate triangle RST left 3 units and
units. List the coordinates of the vertices of the
re.



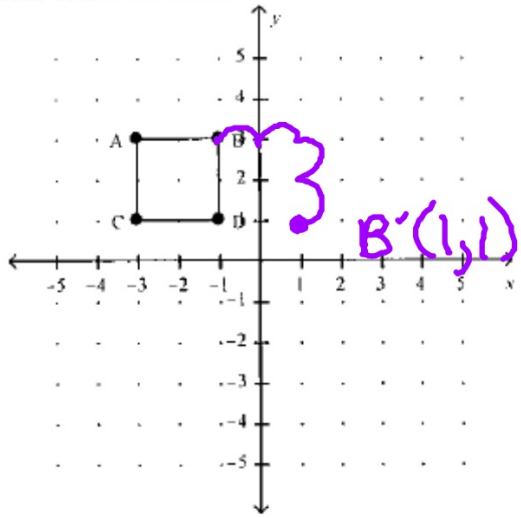
6), S′(4, 3), T′(8, 3)

4), S′(−2, 1), T′(2, 1)

c. R′(3, 2), S′(1, −1), T′(5, −1)

d. R′(0, 2), S′(−2, −1), T′(2, −1)

3. The plan for a room is drawn on a gri
is then decided that the square table should be moved
the right 2 units and down 2 units. List the new
coordinates of the vertices.



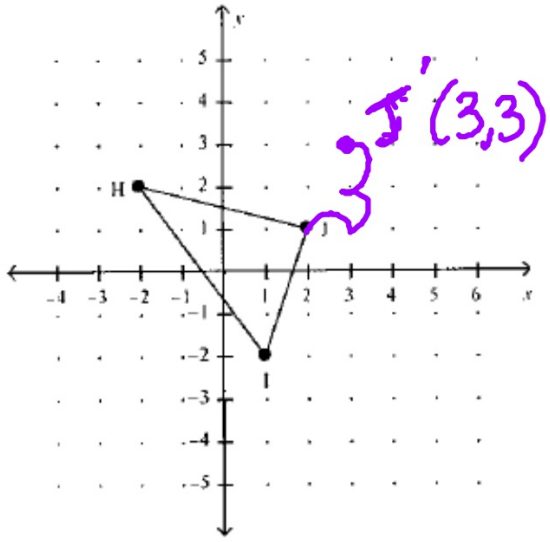
a. A′(−1, 1), B′(1, 1), D′(1, −1), C′(−1, −1)

b. A′(−5, 5), B′(−3, 5), D′(−3, 3), C′(−5, 3)

c. A′(−3, 1), B′(−1, 1), D′(−1, −1), C′(−3, −1)

d. A′(−1, 3), B′(1, 3), D′(1, 1), C′(−1, 1)

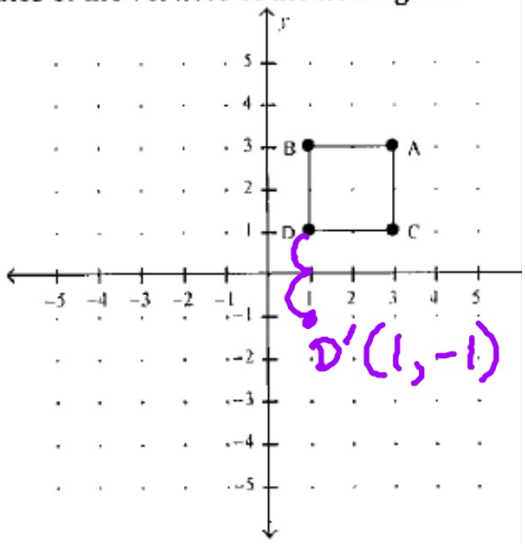
2. Translate HIJ right 1 unit and up 2 units. Find the coordinates of the vertices of the new figure.



1, 2), I′(2, −2), J′(3, 1)
1, 4), I′(2, 0), J′(3, 3)

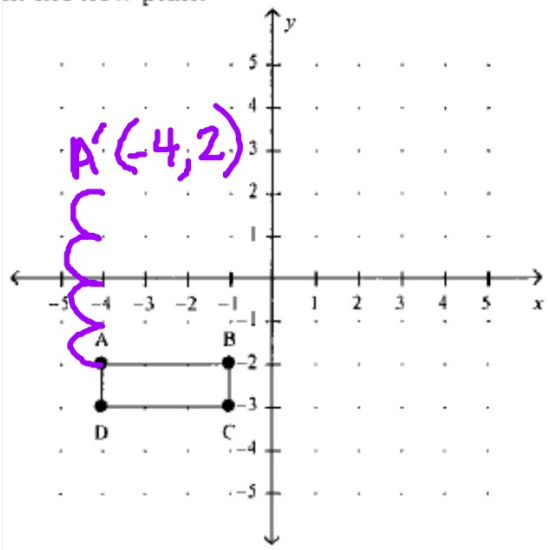
c. H′(−2, 4), I′(1, 0), J′(2, 3)
d. H′(−3, 0), I′(0, −4), J′(1, −1)

4. Reflect BACD across the x-axis. Find the coordinates of the vertices of the new figure.



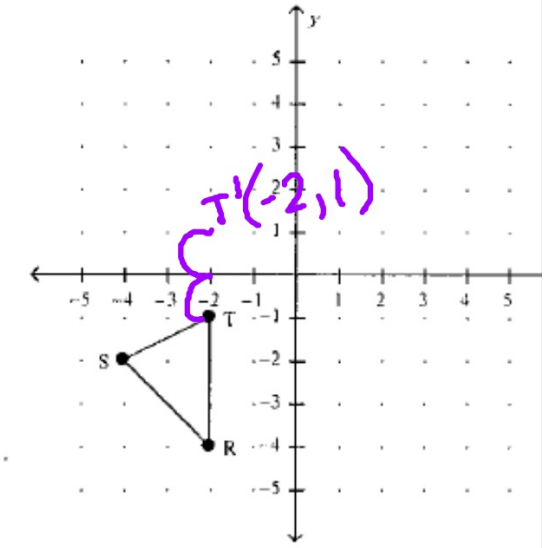
a. B′(1, 3), A′(3, 3), C′(3, 1), D′(1, 1)
b. B′(1, −3), A′(3, −3), C′(3, −1), D′(1, −1)
c. B′(−1, −3), A′(−3, −3), C′(−3, −1), D′(−1, −1)
d. B′(−1, 3), A′(−3, 3), C′(−3, 1), D′(−1, 1)

5. A bedroom plan is being designed on the ow. The designer decides to reflect the placement ed, which is represented by rectangle ABCD, across is. What will be the coordinates of the vertices of in the new plan?



, 2), B′(−1, 2), C′(−1, 3), D′(−4, 3)
, −2), B′(−1, −2), C′(−1, −3), D′(−4, −3)
2), B′(1, 2), C′(1, 3), D′(4, 3)
−2), B′(1, −2), C′(1, −3), D′(4, −3)

___ 7. A flag is represented by triangle the grid below. The flag is moved so that it is refl across the x-axis. What are the coordinates of the after the reflection?



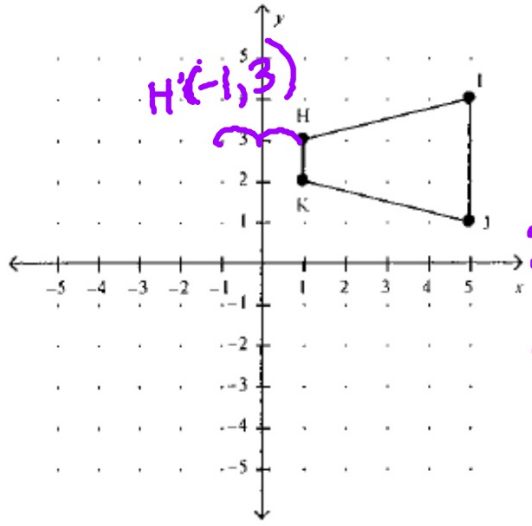
a. R′(2, 4), S′(4, 2), T′(2, 1)

b. R′(−2, 4), S′(−4, 2), T′(−2, 1)

c. R′(−2, −4), S′(−4 T′(−2, −1)

d. R′(2, −4), S′(4, − T′(2, −1)

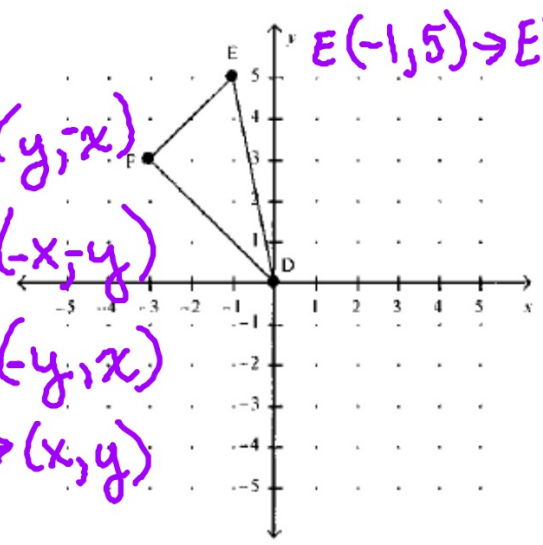
6. Members of a dance team begin in a
id formation that is represented by trapezoid HIJK
grid below. They move so that their new formation
ection across the y-axis. What are the new
iates of the vertices after this reflection?



CW
90° (x,y) → (y,-x)
180° (x,y) → (-x,-y)
270° (x,y) → (-y,x)
360° (x,y) → (x,y)

1, 3), I'(-5, 4), J'(-5, 1), K'(-1, 2)
, -3), I'(5, -4), J'(5, -1), K'(1, -2)
, 3), I'(5, 4), J'(5, 1), K'(1, 2)
1, -3), I'(-5, -4), J'(-5, -1), K'(-1, -2)

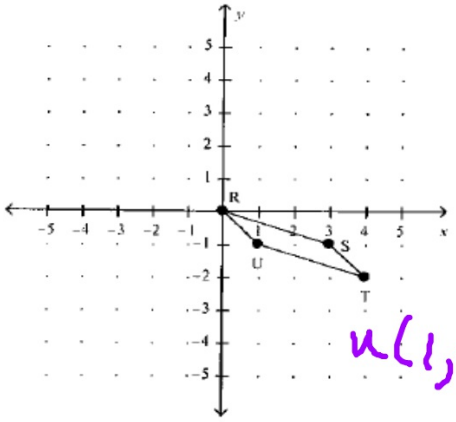
___ 8. Rotate DEF 180° clockwise about t
origin. List the coordinates of the vertices of the nev
figure.



E(-1,5) → E'

a. D'(0, 0), E'(-1, -5), F'(-3, -3)
b. D'(0, 0), E'(5, 1), F'(3, 3)
c. D'(0, 0), E'(1, -5), F'(3, -3)
d. D'(3, -3), E'(2, 2), F

9. Rotate RSTU 360° clockwise about the origin. List the coordinates of the vertices of the new figure.

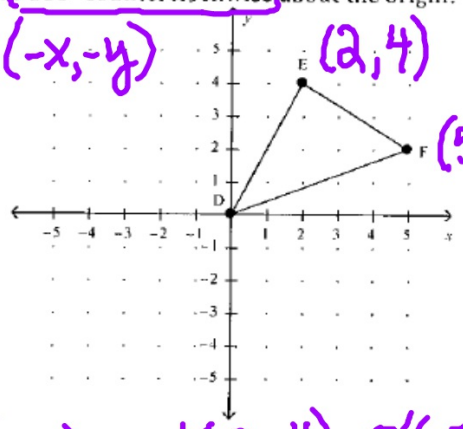


U(1,-1)

a. R′(0, 0), S′(−3, 1), T′(−4, 2), U′(−1, 1)
b. R′(0, 0), S′(3, −1), T′(4, −2), U′(1, −1)
c. R′(−4, 2), S′(−3, 1), T′(0, 0), U′(−1, 1)
d. R′(0, 0), S′(3, 1), T′(4, 2), U′(1, 1)

12. What will the coordinates of DEF be if you rotate the figure 180° counterclockwise about the origin?

$(x,y) \rightarrow (-x,-y)$



E (2,4)

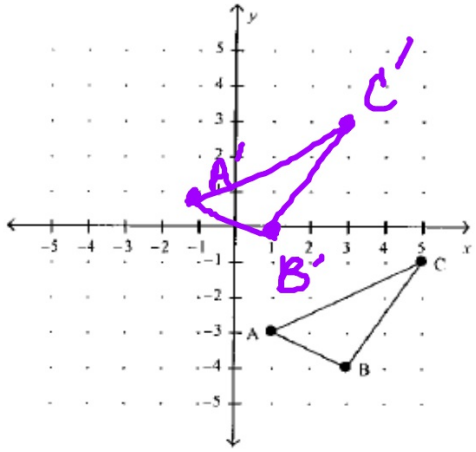
F (5,2)

D′(0,0), E′(-2,-4), F′(-5,-2)

ort Answer: *Graph the image and label with letters.*

. Translate ABC up 4 units and left 2 units. Show all ur work.

+4(y) −2(x)

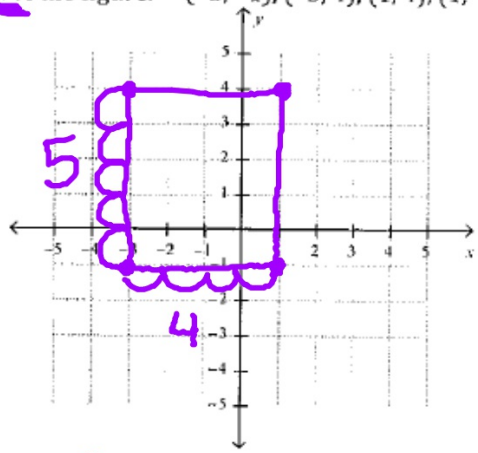


A(1,-3) → A′(-1, 1)

B(3,-4) → B′(1, 0)

C(5,-1) → C′(3, 3)

13. Graph the figure with the given vertices. Then find the area of the figure. (−3, −1), (−3, 4), (1, 4), (1, −1)

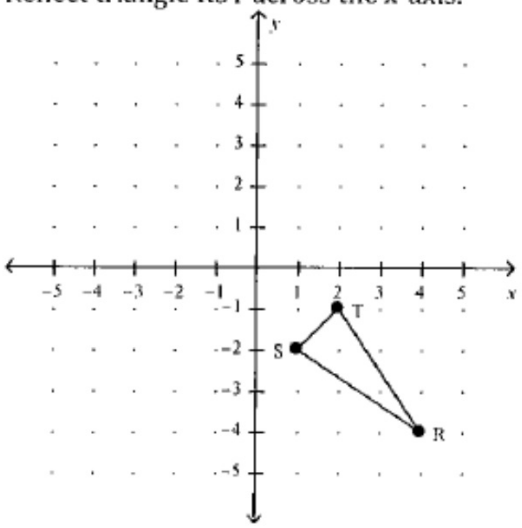


A = lw

A = 4(5)

A = 20 units²

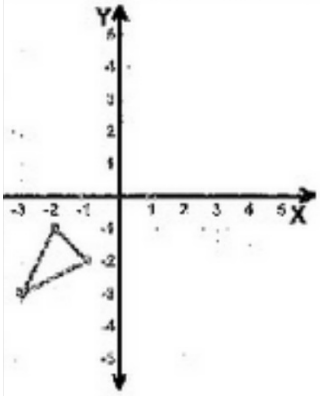
Reflect triangle RST across the x-axis.



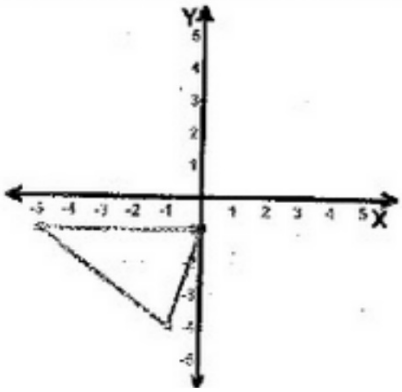
T(2,-1)
S(1,-2)
R(4,-4)

14. Explain how to find the new coordinates o
point (−2, 1) after a translation 4 units to the left ar
units up. Then give the new coordinates.

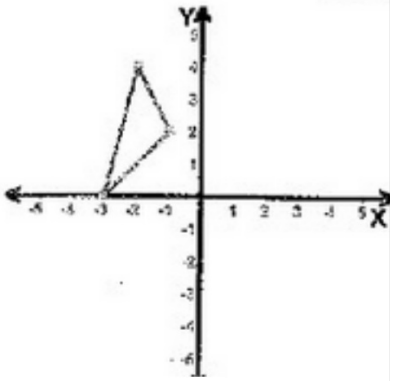
ion: 90° clockwise about the origin



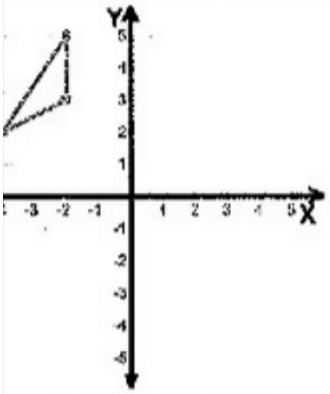
Rotation: 180° about the origin



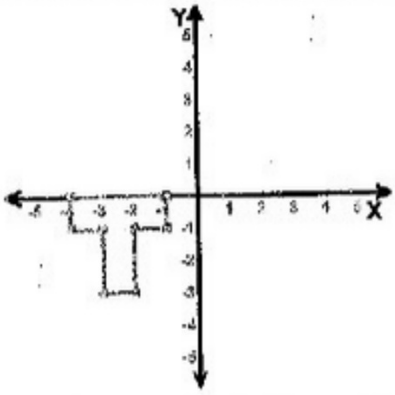
Rotation: 180° about the or



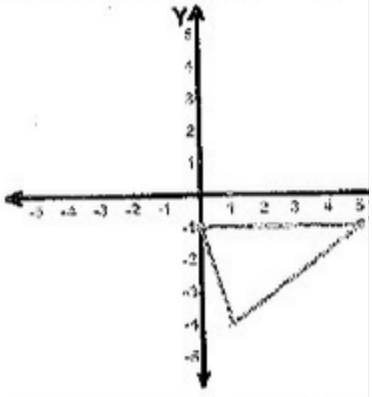
ection: Across the line y = 1



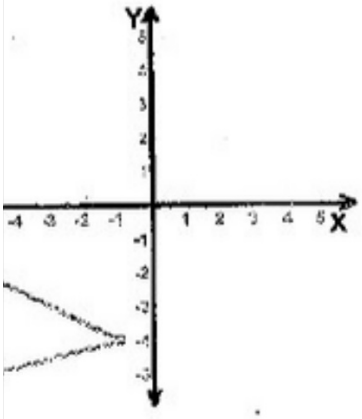
Reflection: Across the line x = -1



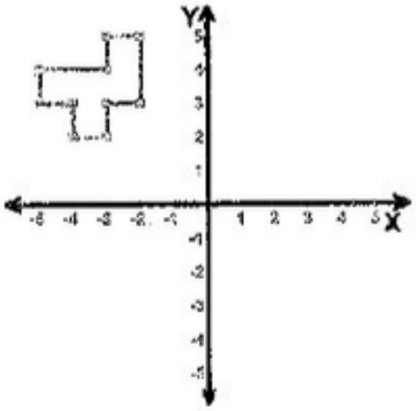
Reflection: Across the y-a



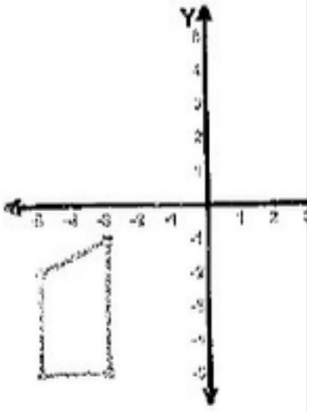
nslation: 5 right and 5 up



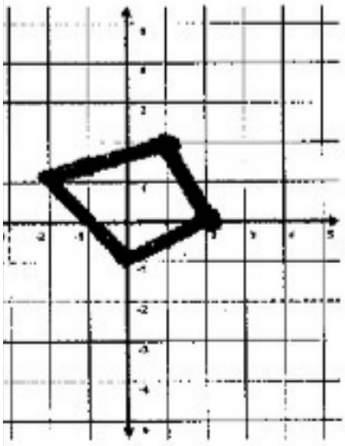
Translation: 2 right and 3 down



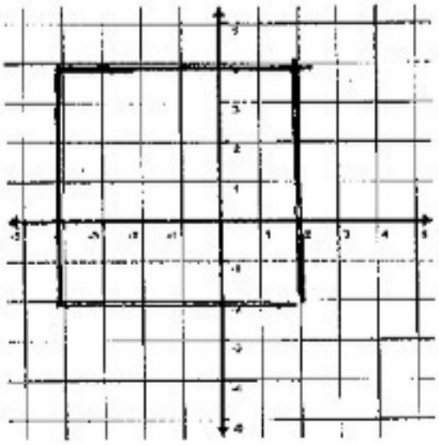
Translation: 4 righ



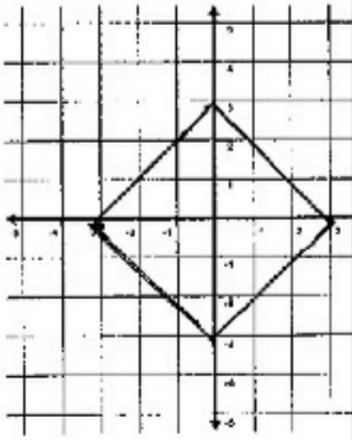
e by a factor of 3



Dilate by a factor of ½



Dilate by a factor of 1



Define the following symbols:

For Example:

$\parallel$ $\overline{WY} \parallel \overline{XZ}$

$\perp$ $\overline{NP} \perp \overline{CA}$