

Size Change Activity

Name _____

You will need the following materials for this activity:

- pencil
- ruler
- piece of grid paper
- this worksheet

1. Plot and label the following points on your grid paper: A (-2, 6) B (5, 4) C (3, -1)
2. Connect the points to form a triangle.

Each group member will complete one of the following steps individually...

- a. Multiply each coordinate by 3 and record the results below.

Plot your points, labeling them A', B', and C'. Connect the points to form a triangle.

- b. Multiply each coordinate by $\frac{1}{2}$ and record the results below.

Plot your points, labeling them A'', B'', and C''. Connect the points to form a triangle.

- c. Multiply each coordinate by -2 and record the results below.

Plot your points, labeling them A''', B''', and C'''. Connect the points to form a triangle.

Together, with your group members...

3. Discuss your results. What do you notice about your different triangles? _____

4. What do you think would happen if you multiplied each coordinate by -1? _____

5. What do you think would happen if you multiplied each coordinate by $\frac{1}{4}$? _____

6. What do you think would happen if you multiplied each coordinate by 5? _____

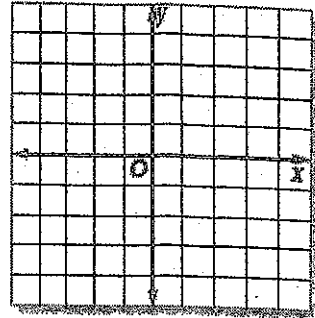
7. What generalizations can you make from this activity? _____

DILATIONS

Name _____

Goal: Recognize and graph dilations on the coordinate plane.

Polygon $ABCD$ has vertices $A(2, 4)$, $B(-1, 5)$, $C(-3, -5)$, and $D(3, -4)$. Find the coordinates of its image after a dilation with a scale factor of $\frac{1}{2}$. Then graph polygon $ABCD$ and its dilation.

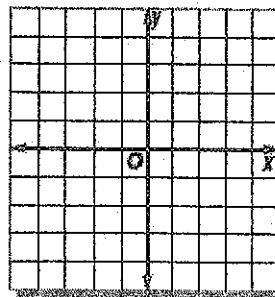
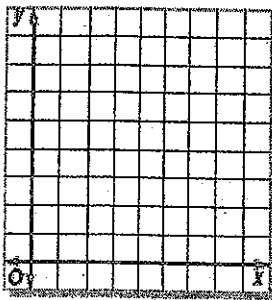


$A'(\quad, \quad)$, $B(\quad, \quad)$, $C(\quad, \quad)$, $D(\quad, \quad)$

Find the coordinates of the vertices of triangle $A'B'C'$ after triangle ABC is dilated using the given scale factor. Then graph triangle ABC and its dilation.

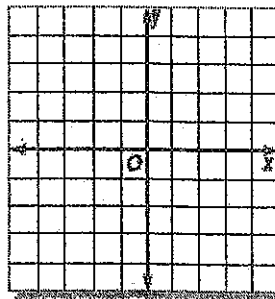
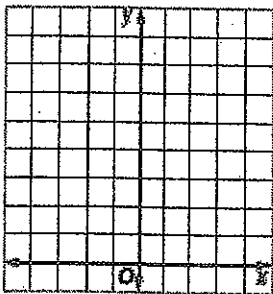
1. $A(1, 1)$, $B(1, 3)$, $C(3, 1)$; scale factor 3

2. $A(-2, -2)$, $B(-1, 2)$, $C(2, 1)$; scale factor 2



3. $A(-4, 6)$, $B(2, 6)$, $C(0, 8)$; scale factor $\frac{1}{2}$

4. $A(-3, -2)$, $B(1, 2)$, $C(2, -3)$; scale factor 1.5



Find the scale factor of the dilation and describe it as a reduction or enlargement. The original image is drawn in black and the result is in gray.

