Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_

**Investigating Reflections**

A **reflection** is a transformation that flips an image over a line called the **line of reflection**. Images shown in mirrors are reflections.

1. The reflection of two points across the line y=3 is shown. Point G’ is the reflection of point G. Point H’ is the reflection of point H.
2. What is the shortest distance from G to the line of reflection?
3. Compare your answer to the distance from G’ to the line of reflection.
4. Does this comparison hold true for H and H’ ?
5. Using this information, write a general rule for reflecting a point across a line.



1. Using this information, write a general rule for reflecting a point across a line.
2. The reflection of a triangle across the line x=4 is shown below.



1. Imagine folding the graph over the line x=4. What would happen?
2. Measure the distance from each of the following.

B and the line of reflection \_\_\_\_\_\_\_\_\_\_\_

B’ and the line of reflection \_\_\_\_\_\_\_\_\_\_\_

C and the line of reflection \_\_\_\_\_\_\_\_\_\_\_

C’ and the line of reflection \_\_\_\_\_\_\_\_\_\_\_

D and the line of reflection \_\_\_\_\_\_\_\_\_\_\_

D’ and the line of reflection \_\_\_\_\_\_\_\_\_\_\_

1. Using a ruler, measure the corresponding sides of triangle BCD and B’C’D’. What do you notice about the lengths of the corresponding sides of the triangles?
2. Using an angle ruler, measure the corresponding angles. What do you notice?
3. Write a rule for the reflection of a polygon across a line.
4. When **reflecting** a figure, what can you summarize about each of the following?

The corresponding angles \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The corresponding side lengths\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Reflect parallelogram ABCD, using the y axis as the reflection line, to form parallelogram A’B’C’D’.

Pay attention to the intervals!



1. List the ordered pairs for the vertices of parallelogram ABCD and parallelogram A’B’C’D’.

A \_\_\_\_\_\_\_\_ A’ \_\_\_\_\_\_\_\_

B \_\_\_\_\_\_\_\_ B’ \_\_\_\_\_\_\_\_

C \_\_\_\_\_\_\_\_ C’ \_\_\_\_\_\_\_\_

D \_\_\_\_\_\_\_\_ D’ \_\_\_\_\_\_\_\_

1. What do you notice about the ordered pairs of the vertices of the original image and its reflected image over the y-axis?
2. A traingle has vertices at A(-4,3), B(1,5), C(2,-2).
3. If this triangle is reflected over the x-axis, what would the ordered pairs of the reflection’s vertices be?
4. If this triangle is reflected over the y-axis, what would the ordered pairs of the reflection’s vertices be?