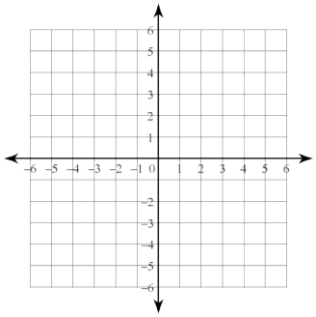
Geometry
Reflections

Name _____
Period _____ Date _____

1. Graph each figure and its image under the given **reflection**. Find the coordinates of the vertices of each image. ***Label all points***.

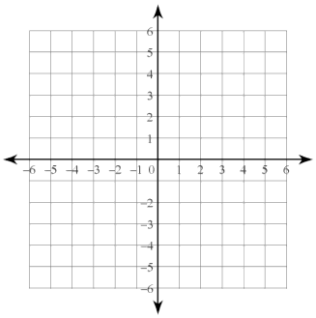
a. ΔEFG if E(-1, 2), F(2, 4) and G(2, -4) reflected over the y-axis.

E'_____
F'_____
G'_____



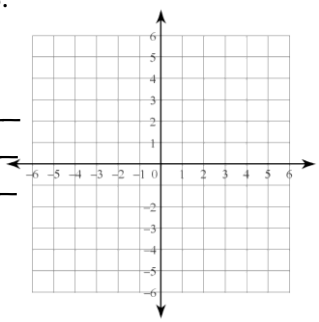
b. ΔPQR if P(1, 2), Q(4, 4) and R(2, -3) reflected over the x-axis.

P'_____
Q'_____
R'_____



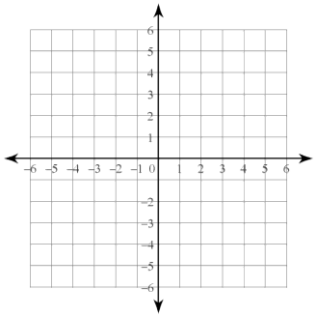
c. ΔABC with vertices A(2,3), B(4, 1), and C(2, 1) reflected over the x-axis.

A'_____
B'_____
C'_____



d. ΔABC if A(0, 3), B(1, -1), and C(-2, -2) reflected over the line y-axis.

A' _____
B' _____
C' _____

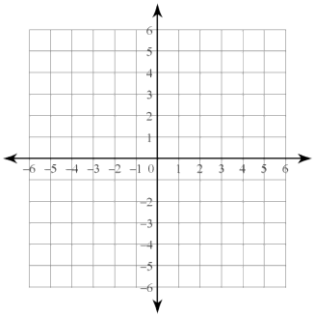


For problems a-d, examine how the coordinates for each point changed after the reflection? Which were the same? Which were different? What pattern did you see?

Write a rule for a reflection over the x-axis and one for over the y-axis:
Over x-axis: (x,y) → (____, ____) Over y-axis: (x,y)→ (____, ____)

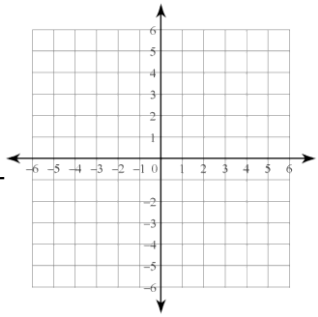
e) ΔBEL if B(-2, 3), E(2, 4), and L(3, 1) reflected over the line $y = x$.

B' _____
E' _____
L' _____



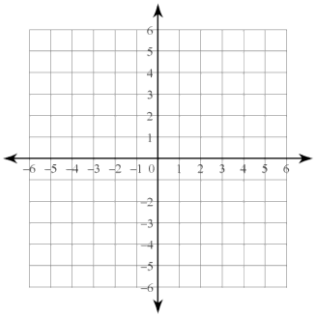
f) Quadrilateral VWXY if V(0, -1), W(1, 1), X(4, -1), and Y(1, -5) reflected over the line $y = x$.

V' _____
W'_____
X' _____
Y'_____



g) Parallelogram TINK if T(-1, 1), I(3, 0), N(4, -3) and K(0,-2) reflected over $y = x$.

T'_____
I' _____
N' _____
K'_____



What pattern did you see from problems e – g? How did the coordinates change in this case?

Using words, write a rule for how to find the coordinates of the image of a reflection over the line $y = x$.

(x,y) → (_____, _____)