Name _____ Date _____

10-8 Study Guide

Complete
* use good notation

Integration: Geometry Reflections

When a figure is **reflected** on a coordinate plane, every point of the figure has a corresponding point on the other side of the line of symmetry.

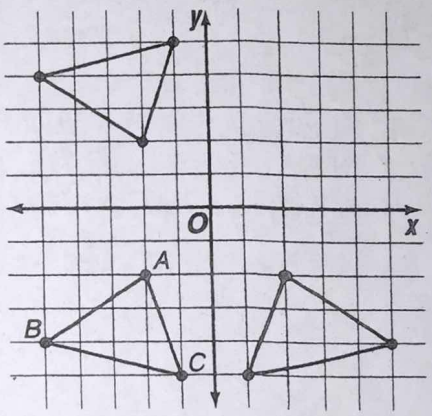
To reflect a figure over the x-axis, use the same x-coordinate and multiply the y-coordinate by -1.

To reflect a figure over the y-axis, multiply the x-coordinate by -1 and use the same y-coordinate.

Example $\triangle ABC$ has vertices $A(-2, -2)$, $B(-5, -4)$, $C(-1, -5)$.

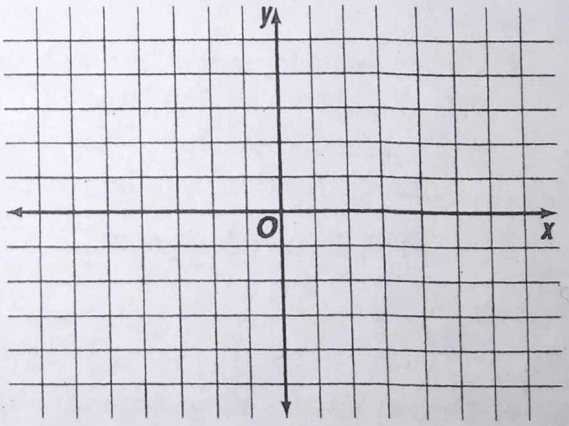
$\triangle ABC$ reflected over the x-axis has vertices at $(-2, 2)$, $(-5, 4)$, $(-1, 5)$.

$\triangle ABC$ reflected over the y-axis has vertices at $(2, -2)$, $(5, -4)$, $(1, -5)$.



Graph trapezoid BIRD with vertices B(1, 1), I(2, 4), R(6, 4), and D(7, 1).

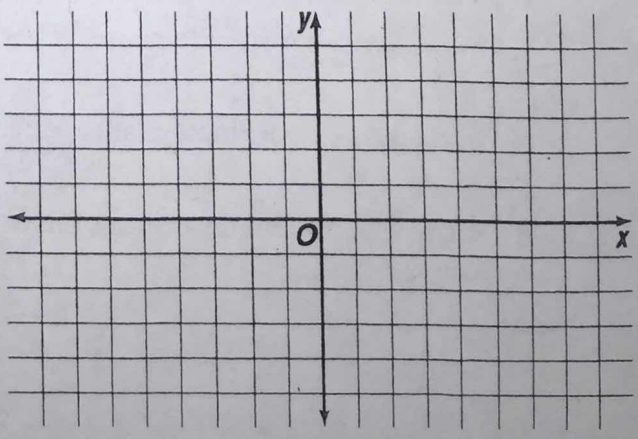
1. Find the coordinates of the vertices after a reflection over the x-axis. Graph the reflection.



2. Find the coordinates of the vertices after a reflection over the y-axis. Graph the reflection.

Graph parallelogram JUNE with vertices J(2, −2), U(6, −2), N(8, −5), and E(4, −5).

3. Find the coordinates of the vertices after a reflection over the x-axis. Graph the reflection.



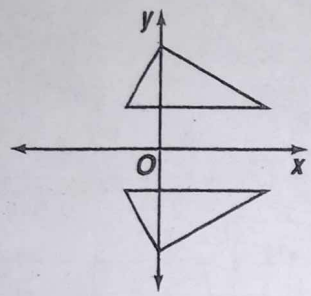
4. Find the coordinates of the vertices after a reflection over the y-axis. Graph the reflection.

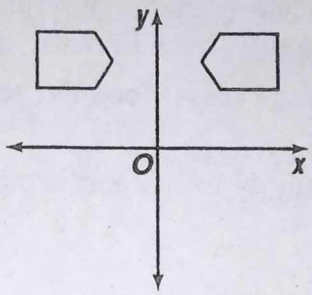
Name _____ Date _____

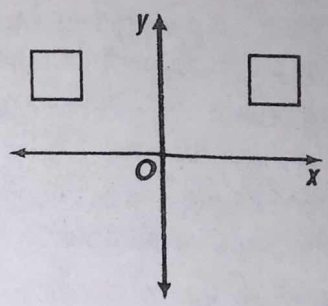
10-8 Practice

Integration: Geometry
Reflections

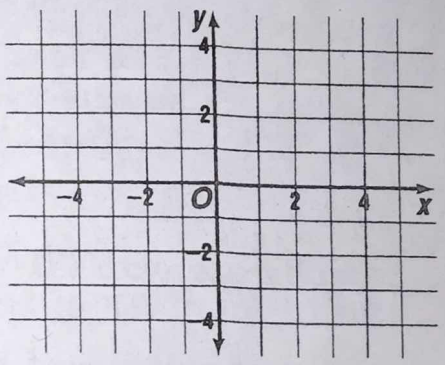
Name the line of symmetry for each pair of figures.

1. 

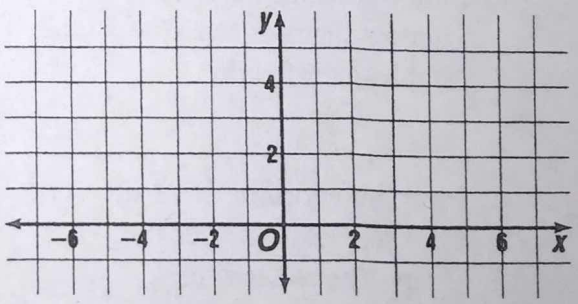
2. 

3. 

4. Graph $\triangle BAT$ with vertices $B(1, 1)$, $A(2, 3)$, and $T(5, 3)$
   a. Reflect $\triangle BAT$ over the x-axis.
   b. Reflect $\triangle BAT$ over the y-axis.



5. Graph parallelogram $KENT$ with vertices $K(1, 2)$, $E(5, 4)$, $N(7, 3)$, and $T(3, 1)$.
   a. Find the coordinates of the vertices after a reflection over the y-axis.
   b. Graph the parallelogram $K'E'N'T'$.



6. Graph $\triangle USA$ with vertices $U(0, 4)$, $S(4, 4)$, and $A(4, 0)$.
   a. Reflect $\triangle USA$ over the y-axis, and label $U'S'A'$.
   b. On the same coordinate plane, reflect $\triangle USA$ over the x-axis.
   c. On the same coordinate plane, reflect $U'S'A'$ over the x-axis.
   d. Write a statement describing the final appearance of the four graphs.