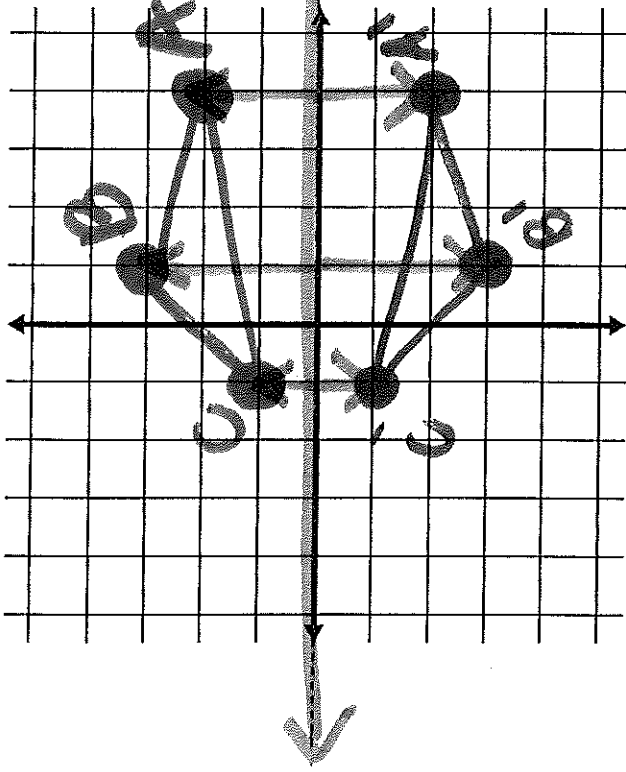


Reflections

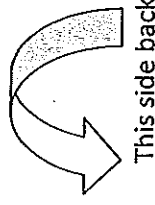


Reflections over the x-axis---

Step 1: Graph triangle ABC with vertices A(4, 2), B(1, 3), and C(-1, 1). Use a dark color.

Step 2: Fold your paper to the back along the x-axis.

Step 3: Trace triangle ABC. Label it A'B'C'. Then unfold your paper.



This side back!

Step 4: What do you notice about the points of your new image? Write a sentence that describes the points in relation to the x-axis. *The coordinates of the original and new images are the same distance from axis | reflected over (x-axis)*

Step 5: List the coordinates of the original image. List the coordinates of the new image.

Coordinates of triangle ABC

A (4, 2)
B (1, 3)
C (-1, 1)

Coordinates of A'B'C'

A' (7, 2)
B' (8, 3)
C' (9, 1)

Step 6: Write a sentence about what you notice. Do both the x-coordinate and the y-coordinate change? If yes, how so?

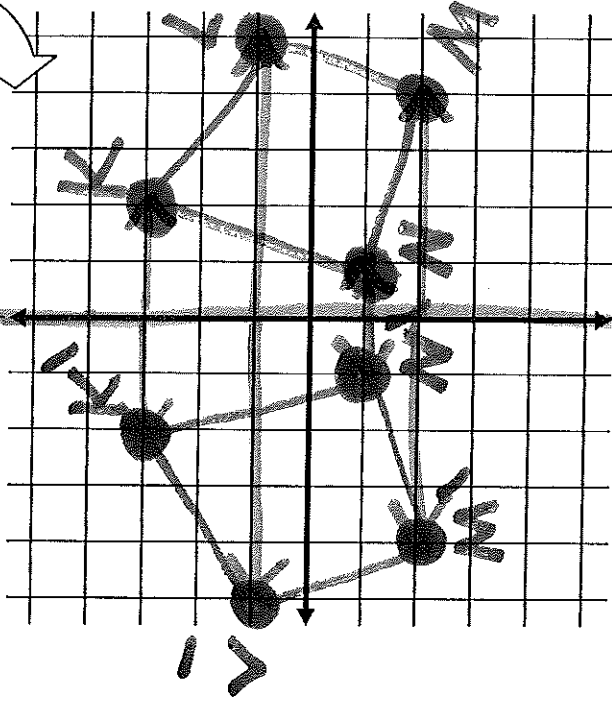
If you reflect over the x-axis your x-coordinates stay the same. Your y-coordinates become their opposites!

Now let's try a reflection over the y-axis.

Step 1: Graph Quadrilateral KLMN with vertices K(2, 3), L(5, 1), M(4, -2), and N(1, -1)

Step 2: Fold your paper to the back along the y-axis.

Step 3: Trace quadrilateral KLMN. Label it K'L'M'N'. Then unfold your paper.



Step 4: What do you notice about the points of your new image? Write a sentence that describes the points in relation to the y-axis. *The coordinates of the original and new images are the same distance from the axis | reflected over.*

Step 5: List the coordinate of the original image. List the coordinate of the new image.

Coordinate of KLMN

K (2, 3)
L (5, 1)
M (4, -2)
N (1, -1)

Coordinates of K'L'M'N'

K' (-2, 3)
L' (-5, 1)
M' (-4, -2)
N' (-1, -1)

Step 6: Write a sentence about what you notice. Do both the x-coordinate and the y-coordinate change? Is yes, how so?

If you reflect over the y-axis your y-coordinates stay the same! The x-coordinates become their opposites.

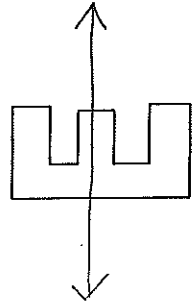
(y-axis)

Symmetry

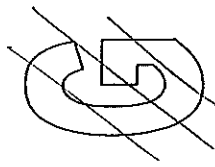
Figures that match exactly when folded are symmetrical

Each fold line is called a line of symmetry

Determine whether each figure has a line of symmetry. If so, draw it.

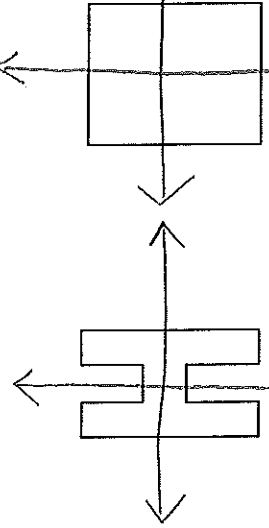


①

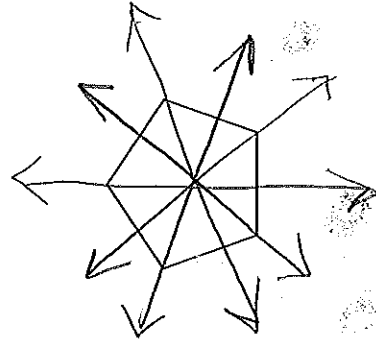


NO lines

of symmetry! ②

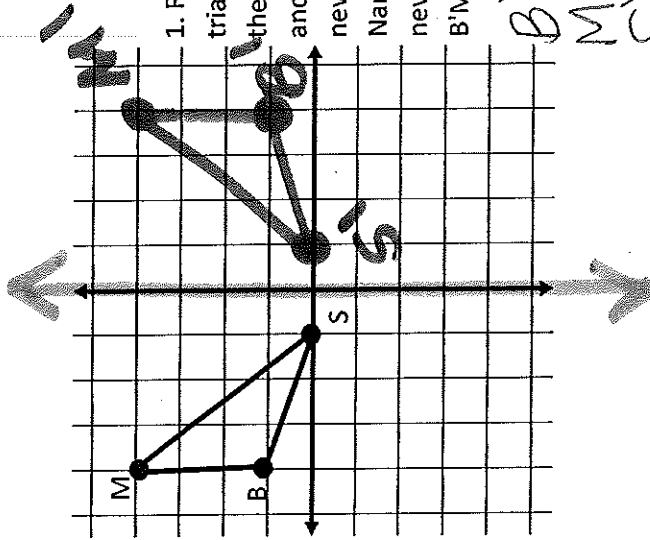


②



⑤

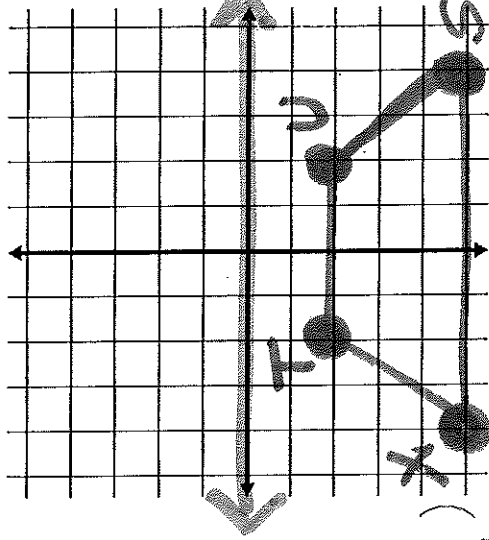
Let's Practice!!!



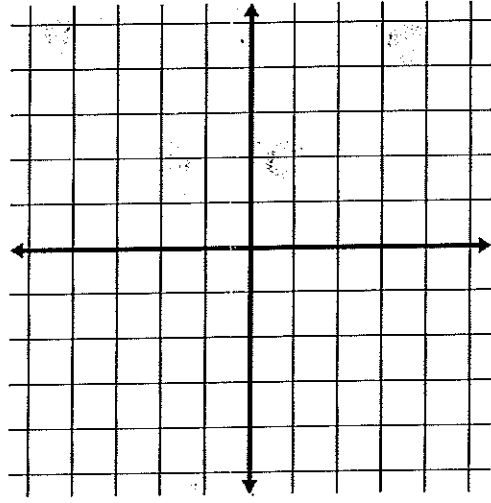
1. Reflect the triangle over the y-axis and draw the new image.

Name the new image B'M'S'.

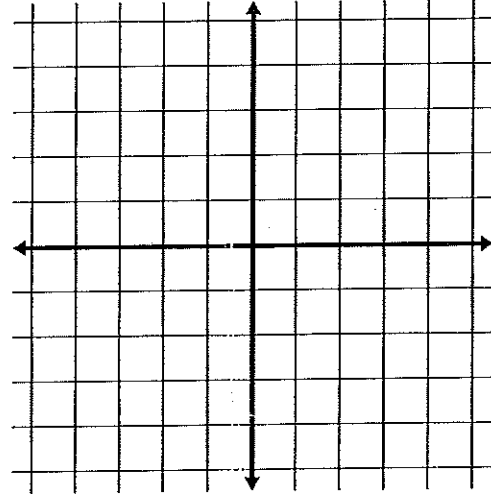
$B' (1, 1)$
 $M' (1, 0)$
 $S' (0, 0)$



2. Draw trapezoid TXSU with vertices T(-2, -2), X(-4, -5), S(4, -5), U(2, -2). Reflect the image over the x-axis. Label the new image T'X'S'U'.



3. Draw triangle DOG with vertices D(0, 4), O(3, 1), G(-3, 1). Reflect the image over the x-axis and name the new image D'O'G'.



4. Draw parallelogram BEAR with vertices B(0, -3), E(3, -5), A(3, 1), R(0, 3). Reflect the image over the y-axis and name the new image B'E'A'R'.