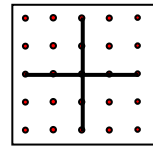


Transformations with Geoboards

1. Construct a polygon that has exactly one axis of symmetry.
2. Construct a polygon that has exactly two axes of symmetry.
3. Construct a polygon that has many axes of symmetry. How many does it have? Whose polygon has the greatest number of axes of symmetry?

On your geoboard, construct an x -axis and a y -axis, with the origin at the center of the board.



5. Construct a line segment from $(1,0)$ to $(2,2)$.
Construct another line segment from $(1, -2)$ to $(2,0)$.
If the 2nd line segment is the image of the 1st, describe the transformation.
6. Construct a line segment from $(1,0)$ to $(2,2)$.
Construct another line segment from $(-2,-2)$ to $(-1,0)$.
If the 2nd line segment is the image of the 1st, describe the transformation.
7. Construct a line segment from $(1,0)$ to $(2,2)$.
Construct another line segment from $(-1,0)$ to $(-2, 2)$.
If the 2nd line segment is the image of the 1st, describe the transformation.
8. Construct a line segment from $(1,0)$ to $(2,2)$.
Construct another line segment from $(1,0)$ to $(2, -2)$.
If the 2nd line segment is the image of the 1st, describe the transformation.

9. Construct a triangle with vertices at $(1,2)$, $(2,2)$ and $(2, 1)$.
 - a. Show the reflection if the plane is reflected across the y -axis.
 - b. List the coordinates of the vertices of the image.

10. Construct a triangle with vertices at $(1,2)$, $(2,2)$ and $(2, 1)$.
 - a. Show the reflection if the plane is reflected across the x -axis.
 - b. List the coordinates of the vertices of the image.

11. Construct a triangle with the vertices at $(1,0)$, $(1,2)$ and $(2,0)$.
 - a. Show the image of this triangle if the plane is rotated by 90° about the origin.
 - b. List the coordinates of the vertices of the image.

12. Construct a triangle with the vertices at $(1,0)$, $(1,2)$ and $(2,0)$.
 - a. Show the image of this triangle if the plane is rotated by 180° about the origin.
 - b. In your notebook, list the coordinates of the vertices of the image.