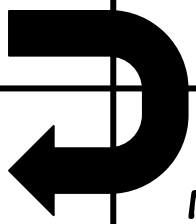
Formal Definitions of Rigid Transformations Notes

Important Information

- **Rigid Transformations-** move the entire image so the shape is unchanged (angles and length of sides do not change).
- **Translation-** is "sliding" a figure from one place on a plane to another.
- **Reflection-** when a figure is "flipped" over a line. The mirror line is a **line of reflection.**
- **Rotation-** a rotation is when a figure is "turned" about (around a point).

Examples:

- On graph paper, create and label the triangle Q(1,4), R(2,1), and S(4,3).
- Translate the triangle 5 units right and 6 units down. Label the new triangle Q'R'S'.
- Reflect the original triangle over the x-axis. Label the new triangle Q"R"S".
- Rotate the original triangle 90 degrees counterclockwise. Label the new triangle Q"'R"'S"'.



Things to remember!

- If the **line of reflection** is x=2, that is the line where every x is 2. Points that are on that line are (2,7), (2, 4), (2, 0), and (2, -3).
- If you rotate an image 180 degrees it doesn't matter which way you rotate it; however, if you rotate 90 or 270 degrees, you need to know which way to rotate the image (**clockwise or counterclockwise**).

More Examples:

- Draw a triangle on graph paper and label the vertices with three different letters.
- Take your original triangle and translate it, reflect it, and rotate it.
- Write down how you translated it (how many units and in which direction?), how you reflected it (over what line of reflection?), and how you rotated it (about what point and in which direction?).