**Transformations: Reflection Notes**

**Reflections: to create a mirror image over an axis on a coordinate plane**

**Graph △*GHJ* with vertices at *G*(4, 2), *H*(3, −4), and *J*(1, 1) and its reflection over the *y*-axis. Then find the coordinates of the reflected image.**

The *y*-axis is the line of reflection. So, plot each vertex of *G*′*H*′*J*′ the same distance from the *y*-axis as its corresponding vertex on *GHJ*.

Point *G* is 4 units to the right of the *y*-axis, so point *G*′ is 4 units to the left of the *y*-axis.

Point *H* is 3 units to the right of the *y*-axis, so point *H*′ is 3 units to the left of the *y*-axis.

Point *J* is 1 unit to the right of the *y*-axis, so point *J*′ is 1 unit to the left of the *y*-axis.



The coordinates are *G*′(–4, 2), *H*′(–3, –4), and *J*′(–1, 1).

** Identify Structure Point *M* has coordinates (3, 3), and point *M´* has coordinates (3, −3). Describe the reflection as over the *x*-axis or *y*-axis.**

In the reflection *M*(, ) ⭢ *M′*(3, ), the *x*-coordinate stays the same and the
*y*-coordinate changes from 3 to –3. This indicates a reflection over the *x*-axis.