Other Functions with Restricted Domains

A line segment is a function with what we call a restricted domain; that is, its domain is not the whole set of real numbers but some some subset. It's really easy take other functions that have domains as the set of all real numbers and then restrict their domains.

As an example, let's graph the quadratic equation:

$y = x^2$

which is shown in Graph 1 below.

If we restrict the domain of this function to be greater than or equal to zero ($x \geq 0$), the graph of that function will look like Graph 2. Notice how there is a closed circle at the origin of the coordinate plane, which means the point (0, 0) is included in the graph.

If we restrict the domain of the original function to be strictly less than zero ($x < 0$), the graph of that function will look like Graph 3. Notice how there is an open circle at the origin of the coordinate plane, which means the point (0, 0) is **not** included in the graph.