A relation is a set of ordered pairs. The first coordinate (usually the x-coordinate) is called the domain and the second (usually the y-coordinate) is called the range. If you remember from earlier chapters the domain contains values that correspond to the independent variable whereas the range contains values corresponding to the dependent variable.

## Linear equations in the coordinate plane

A linear equation is an equation with two variables whose graph is a line. The graph of the linear equation is a set of points in the coordinate plane that all are solutions to the equation. If all variables represent real numbers one can graph the equation by plotting enough points to recognize a pattern and then connect the points to include all points.

If you want to graph a linear equation you have to have at least two points, but it's usually a good idea to use more than two points. When choosing your points try to include both positive and negative values as well as zero.

Graft the function y = x + 2Begin by choosing a couple of values for  $x \in 0$ , 0, 1 and 2 and calculate the corresponding y values.

х	Y = x + 2	Ordered pair
-2	-1 + 2 = 0	(-2, 0)
-1	-1 + 2 = 1	(-1, 1)
0	0 + 2 = 2	(0, 2)
1	1 + 2 = 3	(1, 3)
2	2 + 2 = 4	(2, 4)

Now you can just plot the five ordered pairs in the coordinate plane