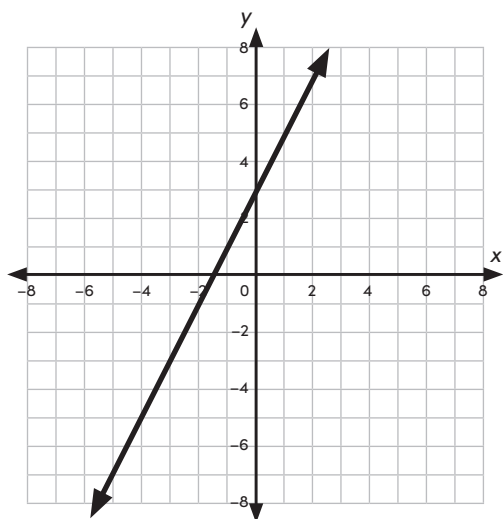


Linear and Nonlinear Functions

Linear Functions

Graph:

Linear functions form straight lines when graphed. Here is a graph of a linear function.



Equation:

Linear functions can be written in slope-intercept form, or $y = mx + b$, where m is the slope and b is the y -intercept.

$$y = 2x + 3$$

Table:

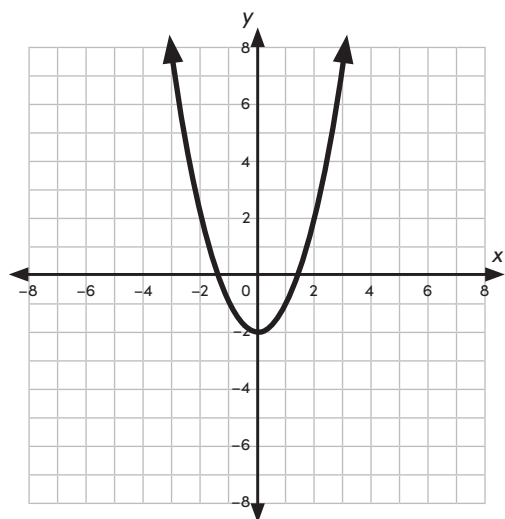
A linear function shown in a table will have a constant rate of change. The table below shows some input and output values for $y = 2x + 3$. Notice that the rate of change, or slope, is always 2.

	x	y	
	-5	-7	$\frac{8}{4} = 2$
+4	-1	1	$\frac{2}{1} = 2$
+1	0	3	$\frac{4}{2} = 2$
+2	2	7	

Nonlinear Functions

Graph:

Nonlinear functions do not form straight lines when graphed. Here is a graph of a nonlinear function.



Equation:

Nonlinear functions cannot be written in slope-intercept form.

$$y = x^2 - 2$$

Table:

A nonlinear function shown in a table will not have a constant rate of change. The table below shows some input and output values for $y = x^2 - 2$. Notice that the rate of change is not constant.

	x	y	
	-2	2	$\frac{-3}{1} = -3$
+1	-1	-1	$\frac{-1}{1} = -1$
+1	0	-2	$\frac{4}{2} = 2$
+2	2	2	