Section Overview

SECTION 7A

Graphing Linear Functions — Lesson 7-3

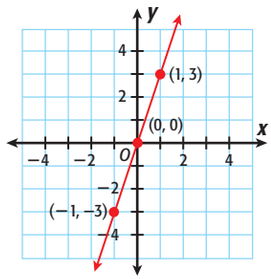
Why? Students should recognize that the rule that describes a number pattern also describes the corresponding function and its graph. The graphs of linear equations are straight lines.

To graph a linear function, start by making a table of ordered pairs. Then plot each ordered pair on a coordinate plane. Connect the points with a straight line.

Function: $y = 3x$

Input: x	Output: y
-2	$3(-2) = -6$
-1	$3(-1) = -3$
0	$3(0) = 0$
1	$3(1) = 3$
2	$3(2) = 6$

Graph of $y = 3x$



Graphing Quadratic Functions — Lesson 7-4

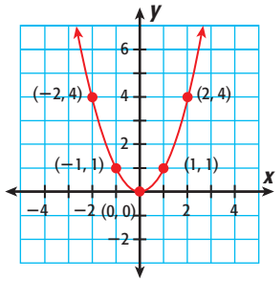
Why? Students must understand how to use function tables to graph functions.

The graph of a quadratic function is a parabola.

Function: $y = x^2$

Input: x	Output: y
-2	$(-2)^2 = 4$
-1	$(-1)^2 = 1$
0	$(0)^2 = 0$
1	$(1)^2 = 1$
2	$(2)^2 = 4$

Graph of $y = x^2$



Cubic Functions — Lesson 7-5

Why? Cubic functions describe numerous real-world situations, such as population growth or the change in volume of a container that results from a change in the container's side length.

All cubic functions have graphs with the same basic shape.

Function: $y = 0.5x^3$

Input: x	Output: y
-2	$0.5(-2)^3 = -4$
-1	$0.5(-1)^3 = -0.5$
0	$0.5(0)^3 = 0$
1	$0.5(1)^3 = 0.5$
2	$0.5(2)^3 = 4$

Graph of $y = 0.5x^3$