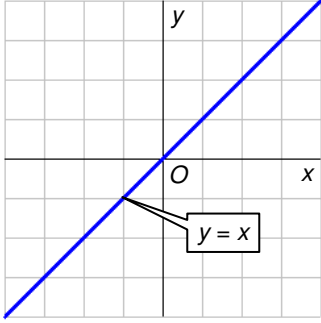
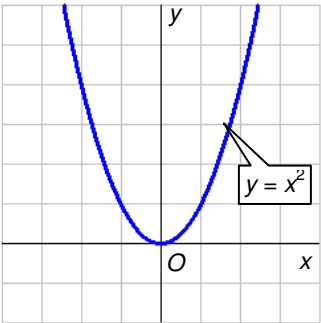


Identifying Parent Functions

A *family* of functions is a group of functions that share one or more similar characteristics. The *parent function* is the simplest function in the family. Consider the two types of functions shown below.

Linear Function	Quadratic Function
Parent Function: $y = x$	Parent Function: $y = x^2$
Shape of Graph: line	Shape of Graph: curve called a <i>parabola</i>
	

Example Parent Functions

Identify the parent function for each function.

a. $y = 2x^2 + 3x - 4$

This is a second-degree equation and therefore represents a quadratic function. The parent function for all quadratic functions in x is given by $y = x^2$.

b. $y = 3x + 2$

This is a first-degree equation and therefore represents a linear function. The parent function for all linear functions in x is given by $y = x$.

Exercises

Identify and sketch the parent function for each of the given functions.

1. $y = 2x$

2. $y = 3x^2 + 1$

3. $y = \frac{x^2}{4}$

4. $y = 5$

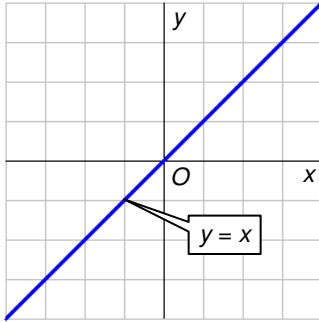
5. $y = 4(x - 1)$

6. $y = (x + 1)^2$

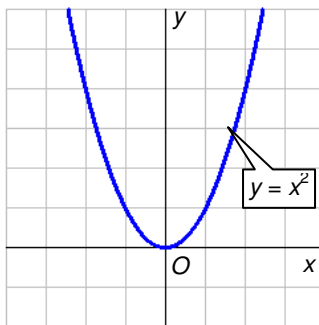
Identifying Parent Functions

Answers

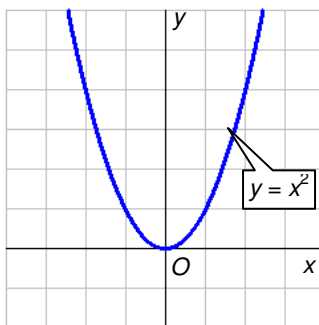
1. $y = x$



2. $y = x^2$



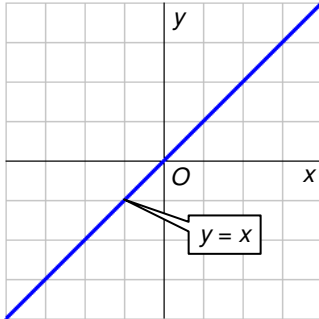
3. $y = x^2$



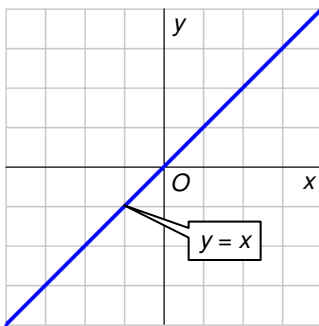
Identifying Parent Functions

Answers (continued)

4. $y = x$



5. $y = x$



6. $y = x^2$

