

The slide features a light beige background with a blue grid pattern in the top-left and bottom-right corners. A dark blue rectangular area is positioned on the left side, containing the text. A vertical red bar is located on the left edge of the dark blue area.

Algebra 1

Chapter 9
Section 9-1

Vocabulary

Quadratic
Function

Function that can be written:
 $y = ax^2 + bx + c$ (right sides of the
equation is a polynomial of degree 2)

Parabola

The u-shaped graph of a quadratic
function

Quadratic
Parent
Function

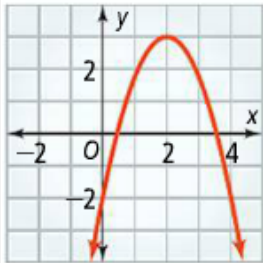
Function that all other quadratic
graphs can be sketched from.
 $y = x^2$

Vocabulary Part 2

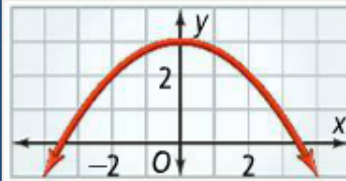
Axis of Symmetry	The line that cuts a parabola into two equal halves
Vertex	The highest or lowest point of a parabola
Minimum	If the vertex is at the bottom of a curve it is a minimum
Maximum	If the vertex is at the top of a curve it is a maximum

Identifying a Maximum or Minimum

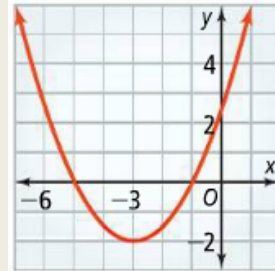
Find the vertex and identify it as a maximum or minimum



Maximum:
(2, 3)



Maximum:
(0, 3)



Maximum:
(-3, -2)

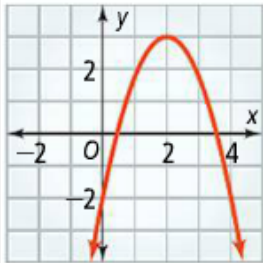
Finding Domain and Range

Domain is a list of possible values of the independent variable (x).

Range is a list of possible values of the dependent variable (y).

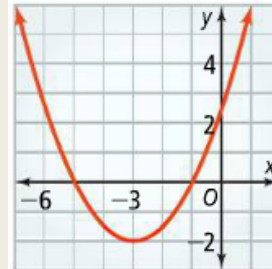
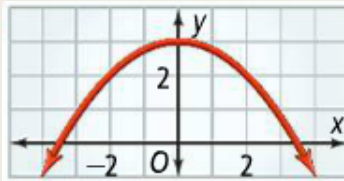
Identifying the Domain and Range

Find the domain and range of the given function graphs



Domain:
All real
Range:
 $y \leq 3$

Domain:
All real
Range:
 $y \leq 3$



Domain:
All real
Range:
 $y \geq -2$

Identifying the Domain and Range

Find the domain and range of the given functions

$$f(x) = x^2 - 9$$

Domain:
All real
Range:
 $y \geq -9$

$$f(x) = -4x^2 + 2$$

Domain:
All real
Range:
 $y \leq 2$

$$f(x) = 5x^2 + 1$$

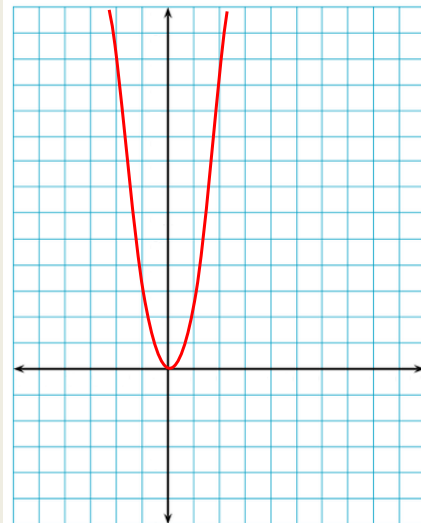
Domain:
All real
Range:
 $y \geq 1$

Graphing a Quadratic Function

Graph the function:

$$y = 3x^2$$

X	Y
-2	
-1	
0	
1	
2	



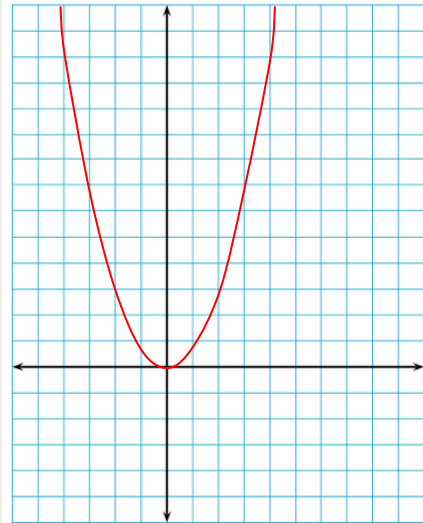
X	Y
-2	12
-1	3
0	0
1	3
2	12

Graphing a Quadratic Function

Graph the function:

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

X	Y
-2	
-1	
0	
1	
2	



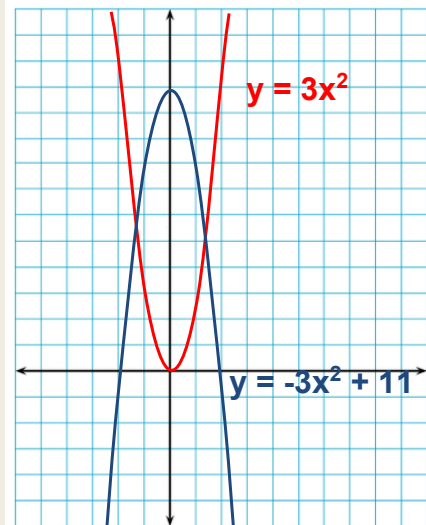
X	Y
-2	3
-1	3/4
0	0
1	3/4
2	3

Graphing a Quadratic Function

Graph the function:

$$y = -3x^2 + 11$$

X	Y
-2	
-1	
0	
1	
2	



X	Y
-2	-1
-1	8
0	11
1	8
2	-1

Flips curve upside-down
Shifts curve up by 11