1.2 Notes - Quadratic Polynomials and their Graphs

A. List all the parts of the polynomial.

1. $-9+4x^2-3x$

Standard form:	All coefficients:	Degree of the polynomial:
Leading coefficients:	Constant:	Type of equation:

B. Simplify Quadratic Polynomials by adding and subtracting.

1. $\left(5n^2-2\right)+\left(7-3n^2\right)$

2. $\left(4x^2-3x+1\right)+\left(-2x^2+5x-6\right)$

3. $\left(6m^2+5m\right)-\left(4m^2-2m\right)+\left(3m^2-7m\right)$

4. $\left(3cd^2-5c\right)-\left(7cd^2+2d\right)-\left(8cd^2+5d\right)$

C. Multiply Polynomials using the distributive property. Simplify and write answers in standard form.

1. $-5w(w-3)$

2. $(m+3)(m-8)$

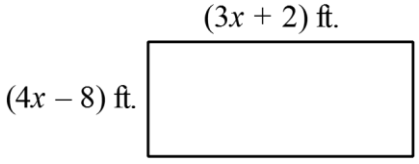
3. $(3x+1)(5x-2)$

4. $(2x-3)^2$

5. $(5y-2)(5y+2)$

6. $-2(x-4)+4(3x-1)$

7. Find the area of the rectangle in terms of x. Write answer in standard form.



D. Solve for *y*.

1. $-4x^2 - 9y = 27$

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

E. Solve for *y* given the value of *x*.

1. $y = 4x^2 + 3$ for $x = -2$

2. $-5y - x^2 = 18$ for $x = 3$

F. Evaluate functions.

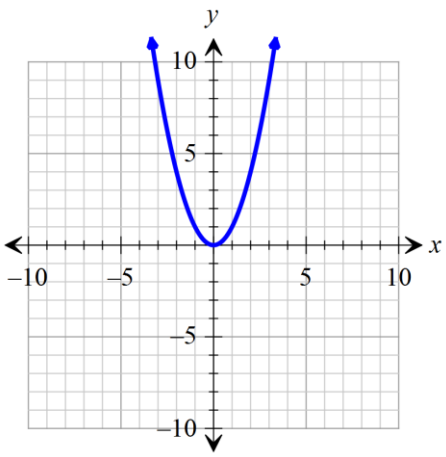
1. $f(x) = 5x^2 - 4, \quad f\left(\frac{1}{5}\right)$

2. $f(x) = \frac{1}{4}x^2 + 1, \quad f(8)$

G. Make a table for each equation. Graph each equation.

1. $f(x) = x^2 - 3$

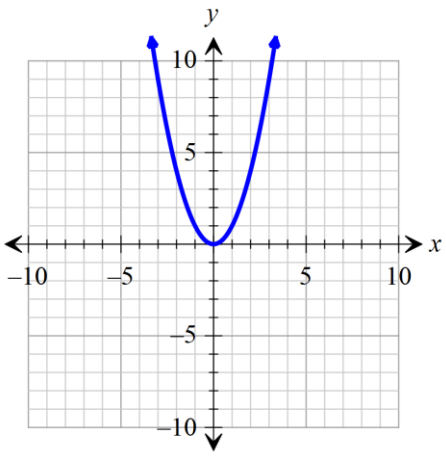
x	$f(x) = x^2 - 3$	$f(x)$
-2		
-1		
0		
1		
2		



What does the -3 do to the graph when compared to the parent graph $y = x^2$?

2. $f(x) = -(x+3)^2 + 1$

x	$f(x) = -(x+3)^2 + 1$	$f(x)$
-2		
-1		
0		
1		
2		



What does the negative(-) do to the graph when compared to the parent graph $y = x^2$?

What does the +3 do to the graph when compared to the parent graph $y = x^2$?

What does the +1 do to the graph when compared to the parent graph $y = x^2$?

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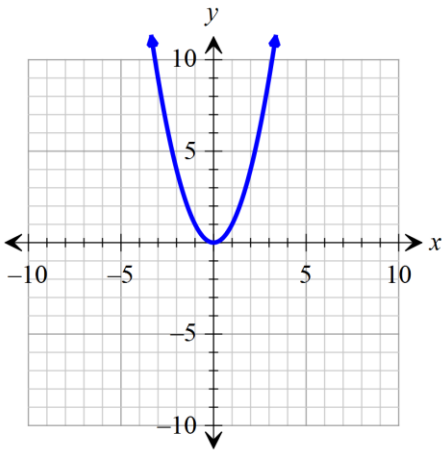
3. $f(x) = 3x^2 - 5$

x	$f(x) = 3x^2 - 5$	$f(x)$
-2		
-1		
0		
1		
2		



What does the 3 do to the graph when compared to the parent graph $y = x^2$?

What does the -5 do to the graph when compared to the parent graph $y = x^2$?

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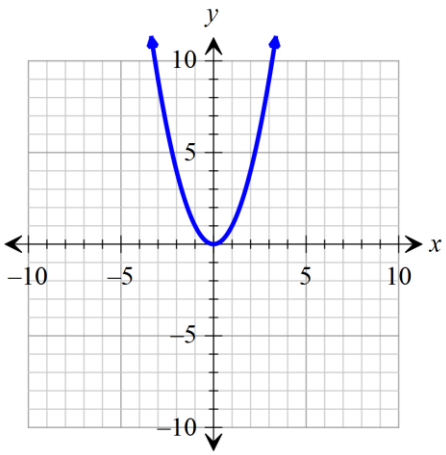
4. $f(x) = -\frac{1}{2}(x-2)^2$

x	$f(x) = -\frac{1}{2}(x-2)^2$	$f(x)$
-2		
-1		
0		
1		
2		



What does the negative(-) do to the graph when compared to the parent graph $y = x^2$?

What does the $\frac{1}{2}$ do to the graph when compared to the parent graph $y = x^2$?

What does the -2 do to the graph when compared to the parent graph $y = x^2$?