Math 115E Activity 13

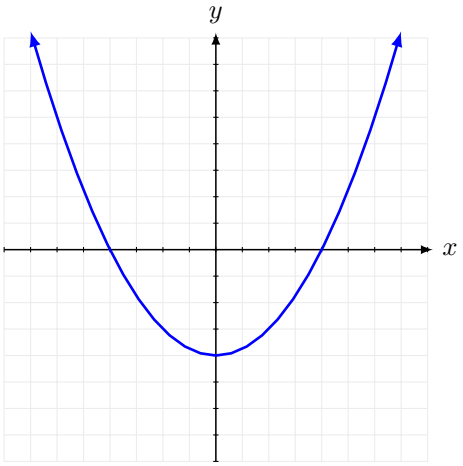
Chapter 5 Section 1-2
Quadratics

Definition: Quadratic functions *are functions that can be written in the forms*

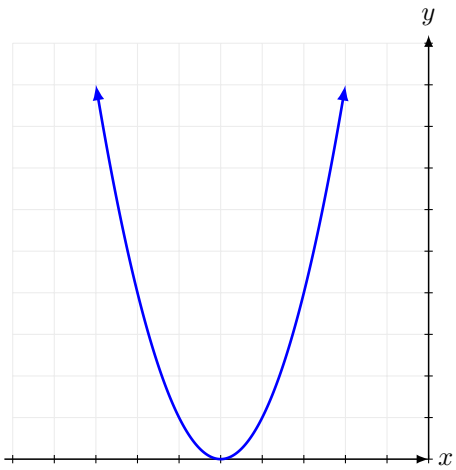
- ***Standard Form:*** $f(x) = ax^2 + bx + c$
  where a, b, c *are real numbers and* $a \neq 0$
- ***Vertex Form:*** $f(x) = a(x - h)^2 + k$
  where a, b, k *are real numbers with the point* (h, k) *being the vertex*

Section 1: Identifying Quadratic functions from a graph

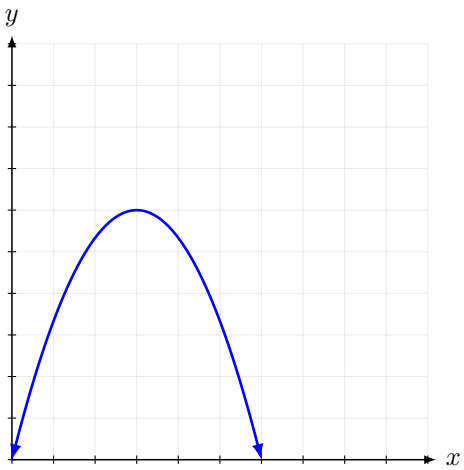
1. Determine the y-intercept, x-intercepts, vertex and max/min of the function



2. Determine the y-intercept, x-intercepts, vertex and max/min of the function



3. Determine the y-intercept, x-intercepts, vertex and max/min of the function



Section 2: Factoring a quadratic expression

Helpful Tips: *When factoring, the form $x^2 + bx^2 + c$ can be factored as $(x - m)(x - n)$ with real numbers m and n such that: they both multiply to c and yet both add to b*

1. Factor $x^2 + x - 6$

2. Factor $x^2 - x - 6$

3. Factor $x^2 - 9x + 20$

4. Factor $x^2 + 7x + 6$

5. Factor $x^2 - 2x - 80$

6. Factor $x^2 + 42x - 13$

5. Factor $x^2 - 4$

6. Factor $x^2 + 2x - 120$

7. Factor $x^2 + 22x + 120$

8. Factor $x^2 + 18x + 32$

9. Factor $x^2 + 28x + 192$

10. Factor $x^2 + 33x + 200$