11-2-18   Quadratic

$$ax^2 + bx + c \rightarrow \text{standard form}$$

a-value

1. fractions & decimals between 0-1:
   · Parabola grew wider as the decimals get smaller.
2. numbers greater than 1:
   · Parabola grew more narrow as the #'s get larger.
3. negative #'s:
   · flips the parabola upside down

c-value

· moves the parabola ↑ and ↓
1. $ax^2 + c \rightarrow$ up "c" units

2. $ax^2 - c \rightarrow$ down "c" units

Examples: order from widest to narrowest

			widest		narrowest
1. $y = x^2$	$y = \frac{1}{2}x^2$	$y = -2x^2$	$y = \frac{1}{2}x^2$	$y = x^2$	$y = -2x^2$
2. $y = 9x^2$	$y = 3x^2$	$y = 5x^2$	$y = 3x^2$	$y = 5x^2$	$y = 9x^2$
3. $y = -\frac{1}{4}x^2$	$y = \frac{1}{2}x^2$	$y = -6x^2$	$y = -\frac{1}{4}x^2$	$y = \frac{1}{2}x^2$	$y = -6x^2$