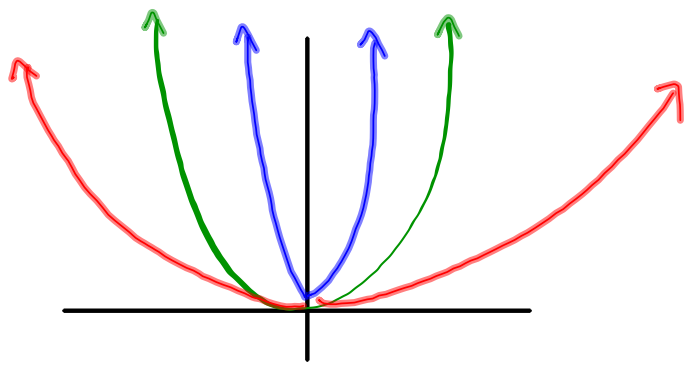
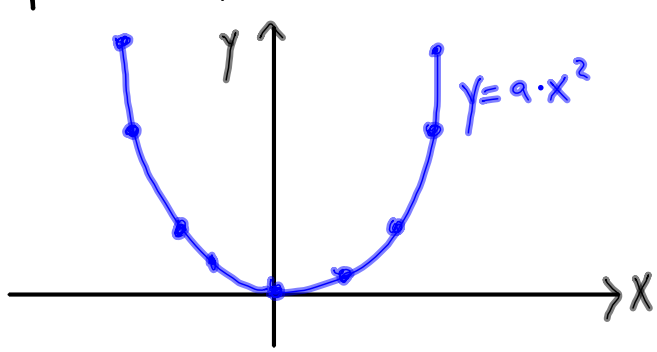
QUADRATIC FUNCTIONS.

(a.k.a. 2nd degree functions)



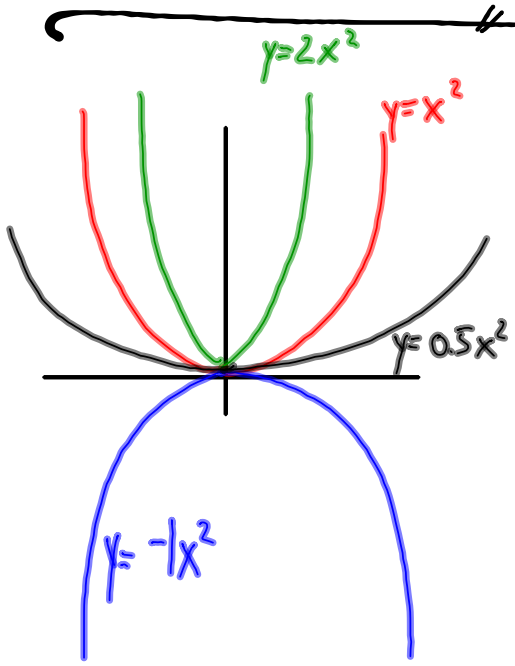
The formula: $y = a \cdot x^2$

- the 'x' always has an exponent of 2
- the graph always looks like a 'U'



The slope of the line is always changing.

How does 'a' change the graph?



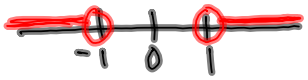
$y = 1x^2$

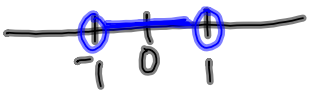
$y = 2x^2$ steeper curve.

$y = -1x^2$ upside-down 'U'

$y = 0.5x^2$ flatter curve

if 'a'

- + ive → ∪ (points up)
- − ive → ∩ (points down)
- $|a| > 1$ steeper 

- $|a| < 1$ flatter 

Working backward

$$y = a \cdot x^2$$

$$a = \frac{y}{x^2}$$

$$x = \sqrt{\frac{y}{a}}$$