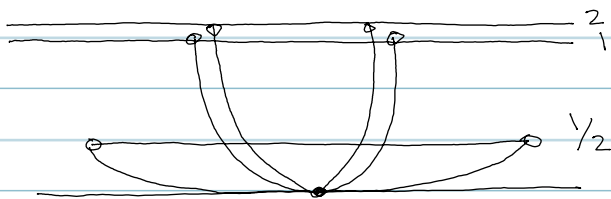


$0 < |a| < 1$ compressed (wide)

$|a| = 1$ neutral

$|a| > 1$ stretched (narrow)



Intercepts

y-intercept $x = 0$

point plug in

$$y = ax^2 + bx + c$$

x-intercept $y = 0$

$$0 = ax^2 + bx + c$$

⇒ quadratic equation

options →

Quadratic Formula

Traditional

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$0 = ax^2 + bx + c$$
$$0 = -2x^2 + 4x - 7$$

$$a = -2 \quad b = 4 \quad c = -7$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-4 \pm \sqrt{(4)^2 - 4(2)(-7)}}{2(-2)}$$

$$x = \frac{-4 \pm \sqrt{16 - 56}}{-4}$$

$$x = \frac{-4 \pm \sqrt{-40}}{-4}$$

$$x = \frac{-4 \pm \sqrt{-40}}{-4} \rightarrow \frac{-4 \pm 2i\sqrt{10}}{-4}$$

$$x = \frac{2 \pm i\sqrt{10}}{2}$$

$$x = \frac{2}{2} \pm \frac{\sqrt{10}i}{2}$$

$$x = 1 \pm \frac{\sqrt{10}i}{2}$$