$a=2$
$b=3$
$c=4$

Solve:

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

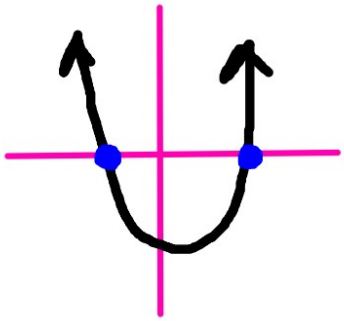
① $2x^2 + 3x + 4 = 0$

$$x = \frac{-(3) \pm \sqrt{(3)^2 - 4(2)(4)}}{2(2)}$$

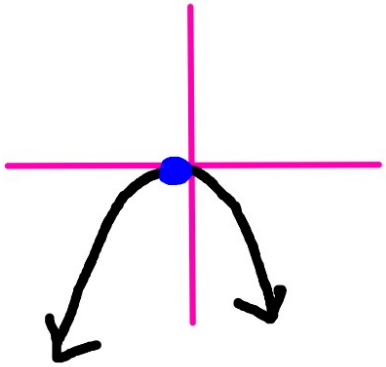
$$x = \frac{-3 \pm \sqrt{9-32}}{4} = \frac{-3 \pm \sqrt{-23}}{4} = \frac{-3 \pm i\sqrt{23}}{4}$$

Discriminant $= -23$ No Real Solutions

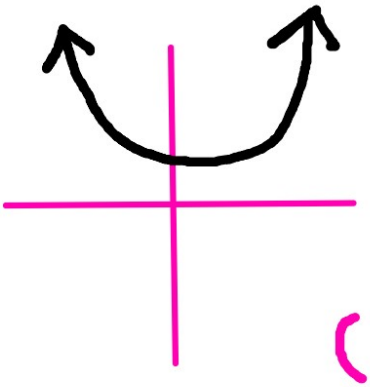
Real Solutions



2 Real Solutions



1 Real Solution



No Real Solution (i)

(*) **Discriminant** = $b^2 - 4ac$ (part under the square root)

(positive)	$b^2 - 4ac > 0$	2 real solutions
	$b^2 - 4ac = 0$	1 real solution
(negative)	$b^2 - 4ac < 0$	0 real solution

Ex: $3x^2 - 4x + 5 = 0$

Find Discriminant

(state how many real solutions)

$b^2 - 4ac$

$a = 3$

$b = -4$

$c = 5$

$(-4)^2 - 4(3)(5)$

$= 16 - 60$

$= -44$

No real solution