

(Finding zeros)

## Solving Quadratics using the Quadratic Formula

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

Use the quadratic formula to find the zeros

ex)  $y = 2x^2 - 12x + 9$

$a = 2$

$b = -12$

$c = 9$

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

①  $x = \frac{-(-12) \pm \sqrt{(-12)^2 - 4(2)(9)}}{2(2)}$

① substitute

② simplify the square root

③  $x = \frac{12 \pm 8.5}{4}$

②  $\sqrt{144 - 72} = \sqrt{72} = 8.5$

④  $x = \frac{12 + 8.5}{4}$  and  $x = \frac{12 - 8.5}{4}$

③ Re-write

④ split up

⑤  $x = 5.125$  and  $x = 0.875$

⑤ solve

\* These are the x values that will make the quadratic function = 0

\* These are the points where the parabola crosses the x-axis