

## The Quadratic Formula

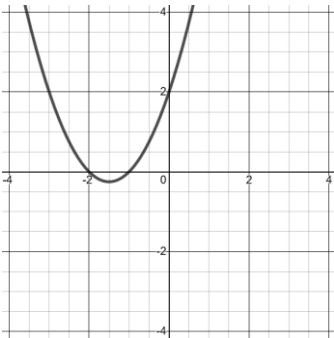
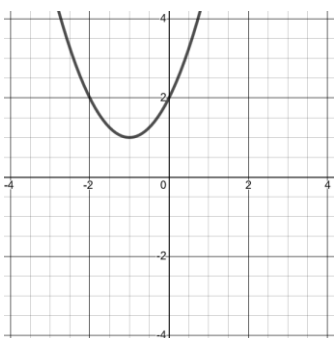
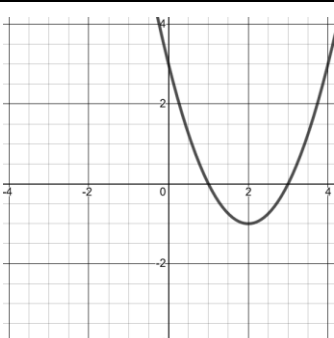
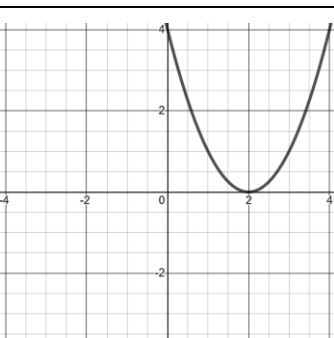
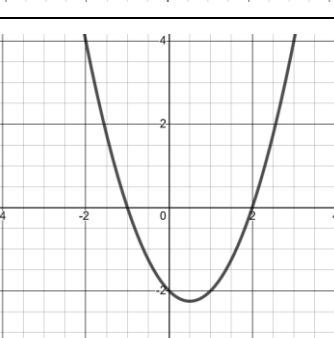
A general quadratic equation:  $ax^2 + bx + c = 0$

$$\text{The quadratic formula: } x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Fill in the blanks below:

Equation	Quadratic formula	Simplified	Solutions (2dp)
$x^2 + 4x + 2 = 0$	$\frac{-( ) \pm \sqrt{( )^2 - 4( )( )}}{2( )}$	$x = \frac{-4 \pm \sqrt{8}}{2}$	$x =$ and $x =$
$x^2 - 5x + 3 = 0$	$\frac{-( ) \pm \sqrt{( )^2 - 4( )( )}}{2( )}$	$x = \frac{5 \pm \sqrt{\quad}}{2}$	$x =$ and $x =$
$x^2 + x = 0$	$\frac{-( ) \pm \sqrt{( )^2 - 4( )(-3)}}{2( )}$	$x = \frac{\pm \sqrt{\quad}}{\quad}$	$x =$ and $x =$
$2x^2 - x = 0$	$\frac{-(-7) \pm \sqrt{(-7)^2 - 4( )(1)}}{2( )}$	$x = \frac{\pm \sqrt{\quad}}{\quad}$	$x =$ and $x =$
$x^2 - 3x = 0$	$\frac{-(-5) \pm \sqrt{(-5)^2 - 4(3)(-4)}}{2(3)}$	$x = \frac{\pm \sqrt{\quad}}{\quad}$	$x =$ and $x =$
$x^2 - 3x = 0$	$\frac{-( ) \pm \sqrt{( )^2 - 4( )( )}}{2( )}$	$x = \frac{-3 \pm \sqrt{5}}{2}$	$x =$ and $x =$
$x^2 - 3x = 0$	$\frac{-( ) \pm \sqrt{( )^2 - 4( )( )}}{2( )}$	$x = \frac{2 \pm \sqrt{24}}{2}$	$x =$ and $x =$
$x^2 - 3x = 0$	$\frac{-( ) \pm \sqrt{( )^2 - 4( )( )}}{2( )}$	$x = \frac{6 \pm \sqrt{28}}{4}$	$x =$ and $x =$

Can you link each quadratic formula below to each function?

Function






Equation
$y = x^2 - 4x + 3$
$y = x^2 + 3x + 2$
$y = x^2 - x - 2$
$y = x^2 - 4x + 4$
$y = x^2 + 2x + 2$

Quadratic formula
$x = \frac{-3 \pm \sqrt{1}}{2}$
$x = \frac{4 \pm \sqrt{0}}{2}$
No solutions
$x = \frac{4 \pm \sqrt{4}}{2}$
$x = \frac{1 \pm \sqrt{9}}{2}$