

Name

9.3

Solve Quadratic Equations by Graphing

Alg I

I can solve
quadratic
equations
by graphingCh. 9
Quiz

Quadratic Equation: An equation that
can be written as $y = ax^2 + bx + c$

Example 1/2/3:

1) $x^2 - 6x + 8 = 0$ $a = 1$ $b = -6$

AOS: $x = \frac{-b}{2a} = \frac{-(-6)}{2(1)} = \frac{6}{2} = \boxed{3}$

Vertex: $y = (3)^2 - 6(3) + 8$
 $y = 9 - 18 + 8$
 $y = -1$ $\boxed{(3, -1)}$

x	2	4
y	0	0

$y = 2^2 - 6(2) + 8$
 $y = 4 - 12 + 8$
 $y = 0$

* The solutions are 2 and 4

2) $x^2 + x = -1$
 $\quad \quad \quad +1 \quad +1$

$x^2 + x + 1 = 0$ $a = 1$ $b = 1$

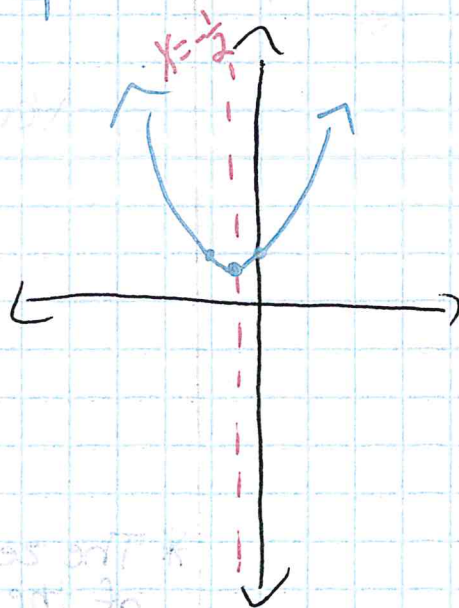
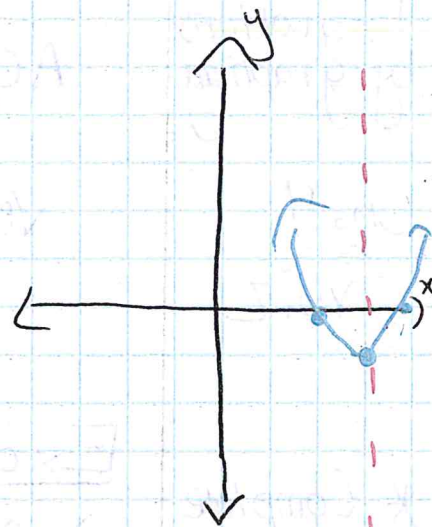
AOS: $x = \frac{-b}{2a} = \frac{-1}{2(1)} = \boxed{-\frac{1}{2}}$

Vertex: $y = \left(-\frac{1}{2}\right)^2 - \frac{1}{2} + 1$
 $y = \frac{1}{4} - \frac{1}{2} + 1$
 $y = 0.75$ $\boxed{\left(-\frac{1}{2}, \frac{3}{4}\right)}$

x	-1	0
y	1	1

$y = (-1)^2 - 1 + 1$
 $y = 1 - 1 + 1$
 $y = 1$
 $y = 0^2 + 0 + 1$
 $y = 1$

* NO SOLUTION



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9.3 Solve Quadratic Equations by Graphing

Alg I

I can solve quadratic equations by graphing

$$3) -x^2 + 6x = 9 \quad a = -1$$

$$\frac{-9 - 9}{-x^2 + 6x - 9} = 0 \quad b = 6$$

$$\text{AOS: } \frac{-b}{2a} = \frac{-6}{2(-1)} = \frac{-6}{-2} = \boxed{3}$$

Ch. 9 Quiz

$$\text{Vertex: } y = -(3)^2 + 6(3) - 9$$

$$y = -9 + 18 - 9$$

$$y = 0 \quad \boxed{(3, 0)}$$

* There is 1 solution: 3

* Complete Skills Practice pg. 589, #

Example 4:

$$4) f(x) = x^2 + x - 6 \quad a = 1$$

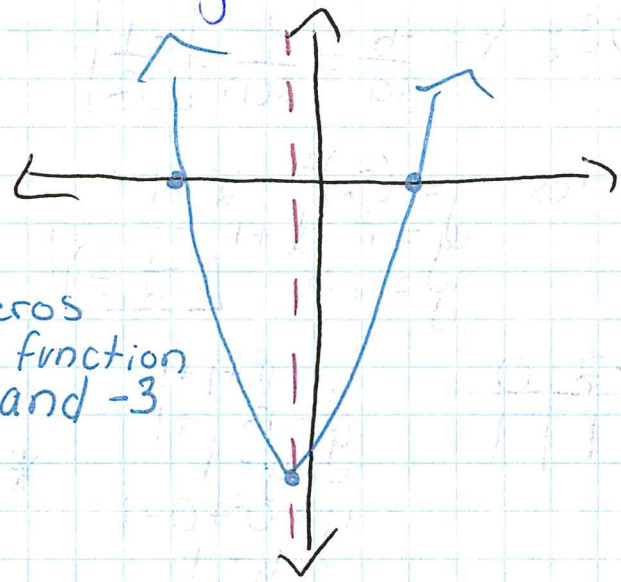
$$b = 1$$

$$\text{AOS: } \frac{-b}{2a} = \frac{-1}{2(1)} = \boxed{-\frac{1}{2}}$$

$$\text{Vertex: } y = \left(-\frac{1}{2}\right)^2 - \frac{1}{2} - 6$$

$$y = \frac{1}{4} - \frac{1}{2} - 6$$

$$y = -6\frac{1}{4} \quad \left(-\frac{1}{2}, -6\frac{1}{4}\right)$$



x	2	-3
y	0	0

* The zeros of the function are 2 and -3

$$y = 2^2 + 2 - 6$$

$$y = 4 + 2 - 6 = 0$$

$$y = (-3)^2 - 3 - 6$$

$$y = 9 - 3 - 6 = 0$$