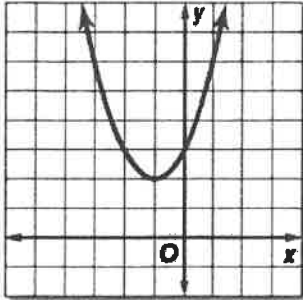


4.2 Solve Quadratic Equations by Graphing
 4.3 Solving Quadratic Equations by Factoring
 Honors Algebra 2

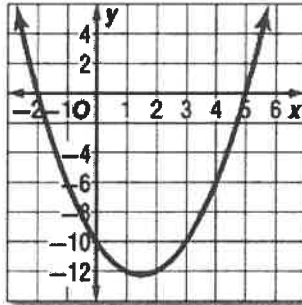
1. Use the related graph of the following to determine the solutions to the equation:

$$x^2 + 2x + 3 = 0$$



No \mathbb{R} solutions

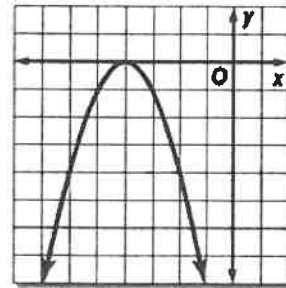
$$x^2 - 3x - 10 = 0$$



$$x = -2, 5$$

2 \mathbb{R} solution

$$-x^2 - 8x - 16 = 0$$



$$x = 4$$

1 \mathbb{R} solution

2. Write a quadratic equation in standard form with the following roots:

$x = 2$
 $x = 4$
 $x - 2 = 0$
 $x - 4 = 0$

$$y = (x-2)(x-4)$$

$$y = x^2 - 6x + 8$$

a. $-\frac{1}{3}, 6$

$$x = -\frac{1}{3}$$

$$3x = -1$$

$$3x + 1 = 0$$

$$y = (3x+1)(x-6)$$

$$y = 3x^2 - 18x + x - 6$$

$$y = 3x^2 - 17x - 6$$

c. $\frac{3}{2}, \frac{1}{4}$

$$x = \frac{3}{2}$$

$$x = \frac{1}{4}$$

$$2x = 3$$

$$4x = 1$$

$$2x - 3 = 0$$

$$4x - 1 = 0$$

$$y = (2x-3)(4x-1)$$

$$y = 8x^2 - 12x - 2x + 3$$

$$y = 8x^2 - 14x + 3$$

3. Find the roots of the following equations.

a. $f(x) = 35x^2 - 15x$

$$0 = 35x^2 - 15x$$

$$0 = 5x(7x - 3)$$

$$x = 0, \frac{3}{7}$$

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b. $f(x) = x^2 - 4x - 21$

$$0 = x^2 - 4x - 21$$

$$0 = (x - 7)(x + 3)$$

$$x = -3, 7$$

c. $y = x^2 - 36$

$$0 = x^2 - 36$$

$$0 = (x - 6)(x + 6)$$

$$x = -6, 6$$

d. $h(x) = 2x^2 + 7x - 30$

$$0 = 2x^2 + 7x - 30$$

$$0 = (2x - 5)(x + 6)$$

$$x = -6, \frac{5}{2}$$

e. $z(x) = 12x^2 - 2x - 2$

$$0 = 12x^2 - 2x - 2$$

$$0 = 2(6x^2 - x - 1)$$

$$0 = (3x + 1)(2x - 1)$$

$$x = \frac{1}{2}, -\frac{1}{3}$$