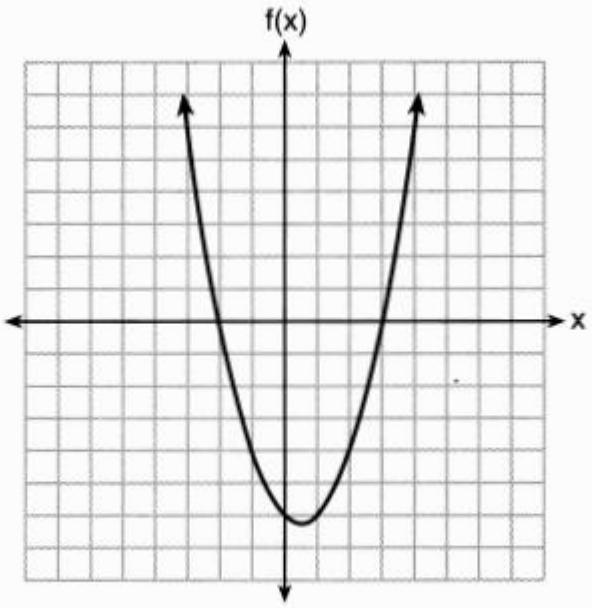
Name: _____ Date: _____

Quadratic Equations Class: **Algebra**

Topic: Solving Quadratic Equations using Quadratic Formula

Try Now

The graph of the function $f(x) = ax^2 + bx + c$ is given below.



Could the factors of $f(x)$ be $(x + 2)$ and $(x - 3)$? Based on the graph, explain why or why *not*.

MODEL_

Steps for using the Quadratic Formula

- Get equation equal to ZERO!!!
- Put equation in standard form: _____
- Identify the *a*, *b*, and *c* #'s.
- Plug into the formula and simplify.

To remember formula sing/hum the phase below to the "pop goes the weasel song"

"x ='s negative b, plus or minus the square root of b² minus 4 a c, all over 2 a"

******WRITE THE FORMULA DOWN AS YOU SING THE SONG******

Quadratic Formula:

MODEL_

Solve for the roots/zeroes of each of the following quadratic equations using the quadratic formula. If necessary, express your answers in simplest radical form.

1. $2x^2 - 18 = -9x$

2. $h(x) = x^2 - 5x - 3$

3. $x^2 - 12x = -20$

4. $2p^2 = -4p + 1$

CFU_THINK-PAIR-SHARE

Solve for the roots/zeroes of each of the following quadratic equations using the quadratic formula. If necessary, express your answers in simplest radical form.

1. $x^2 - 2x = 12$

2. $k(x) = 2x^2 + 8x - 7$

Quadratic Formula:

Solve for the roots/zeroes of the following quadratic equations using the quadratic formula. If necessary, get your answer in simplest radical form.

1. $-3x^2 = 8x - 12$

2. $f(x) = 5x^2 - 3x - 2$

INDEPENDENT PRACTICE

Solve for the roots/zeroes of the following quadratic equations using the quadratic formula. If necessary, get your answer in simplest radical form.

1. $x^2 - 3x - 8 = 0$

2. $2b^2 - 8 = -4b$

3. Matt made a mistake when solving $2x^2 - 5x + 2 = 0$ by the quadratic formula. Explain and correct the mistake.

$$x = -(-5) \pm \sqrt{(-5)^2 - 4(2)(2)}$$

$$x = 5 \pm \sqrt{25 - 16}$$

$$x = 5 \pm \sqrt{9}$$

$$x = 5 \pm 3$$

$$x = \{2, 8\}$$

4. Simplify the following and expressing all answers with only positive exponents.

a) $(-3x^5y^5)(9xy^{-2}z^4)$

b) $5y(2y^4+7y^3)-4y^3(y^2-2y)$

c) $(3x-6)^2$

d) $\dfrac{3ab^2-4a^2b}{ab}$

5. Solve the system of equations graphically.

$2y+3x=8$
$-x+y=-1$