

Warm Up

Multiple Choice wkst (on table)

Solve for the x-intercepts.

$$8x^2 - 4 = 4x$$

Homework Questions?

Self Scoring Scale

4- I can *summarize* the concepts and explain it to others.

3- I can *apply* the concepts to answer questions correctly.

2- I can *apply* the concepts but with some *mistakes*.

1- I *need help* to know how to apply the concepts.

0- I *can't* apply the concepts even with help.

"9.2" Solving Quadratic Equations" wkst #1-13

Warm Up

Write the Quadratic Formula without looking

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

 <https://youtu.be/O8ezDEk3qCg>

Homework Questions?

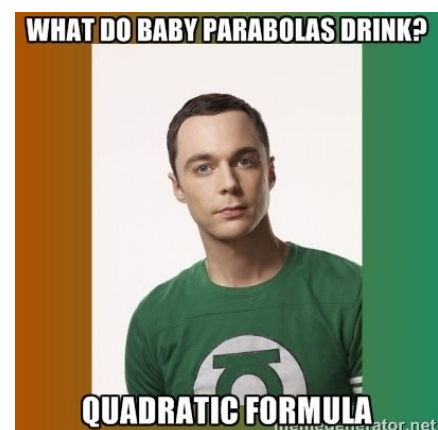
9.6 Solving Quadratic Equations by the Quadratic Formula

Goals:

- Use the quadratic formula to solve a quadratic equation.
- Use quadratic models for real-life situations.

EQ:

What is the quadratic formula?



9.6 Solving Quadratic Equations by the Quadratic Formula - Alg Con Days 1&2 April 05, 2017

② LAST UNIT Experience Exponents	① CURRENT UNIT Quadratic Equations	③ NEXT UNIT Experience Factoring
⑧ Student Activities or Assignments	⑤ UNIT MAP 	
⑦ UNIT SELF-TEST QUESTIONS <ol style="list-style-type: none"> How can you solve a quadratic equation by using square roots? How do you simplify radical expressions? What steps are necessary to graph a quadratic equation? How is the quadratic formula used to solve a quadratic equation? How is the discriminant found and what information does it tell you? 	Solve Simplify Graph Compare.	⑥ UNIT RELATIONSHIPS

THE QUADRATIC FORMULA

The solutions of the quadratic equation $ax^2 + bx + c = 0$ are

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \text{ when } a \neq 0 \text{ and } \sqrt{b^2 - 4ac} \geq 0.$$

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

Example 1: Using the Quadratic FormulaSolve $x^2 + 8x + 15 = 0$ by using the quadratic formula.

$$a=1, b=8, c=15$$

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

$$x = \frac{-8 \pm \sqrt{8^2 - 4(1)(15)}}{2(1)}$$

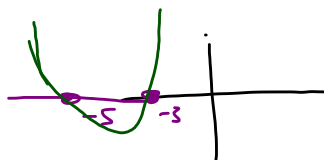
$$= \frac{-8 \pm \sqrt{64 - 60}}{2}$$

$$= \frac{-8 \pm \sqrt{4}}{2}$$

$$x = \frac{-8+2}{2} = \frac{-6}{2} = -3$$

$$x = \frac{-8-2}{2} = \frac{-10}{2} = -5$$

$$x = -3 \text{ and } x = -5$$

**Example 2: Writing in Standard Form**Solve $3x^2 - 7x = 11$.

Try It

Use the quadratic formula to solve the equation.

1) $x^2 + 4x - 5 = 0$

$a=1, b=4, c=-5$

$$x = \frac{-4 \pm \sqrt{4^2 - 4(1)(-5)}}{2(1)}$$

$$= \frac{-4 \pm \sqrt{16 + 20}}{2} = \frac{-4 \pm \sqrt{36}}{2}$$

$x = \frac{-4 + 6}{2}$

$x = \frac{-4 - 6}{2}$

$x = 1$

AND

$x = -5$

$y = x^2 + 5x - 4$

$a=1, b=5, c=-4$

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

$$x = \frac{-5 \pm \sqrt{(5)^2 - 4(1)(-4)}}{2(1)}$$

$$= \frac{-5 \pm \sqrt{25 + 16}}{2} = \frac{-5 \pm \sqrt{41}}{2}$$

$x = \frac{-5 + \sqrt{41}}{2}$

$x \approx 0.70156\dots$

$x = 0.70$

AND

$x = \frac{-5 - \sqrt{41}}{2}$

$x \approx -5.7456\dots$

$x = -5.70$

Homework

9.6 p.536 #7-12, 40, 41

Example 3: Modeling Vertical Motion

Diving - A cliff diver jumps from a height of 58 feet above the water with an initial velocity of 5 feet per second. How long will it take the diver to reach the water?