

keep scrolling to get a
sneak peak!

This set of guided
notes will walk Algebra
2 students through using
the quadratic formula to
solve quadratic equations.
All you need to do is print
& make copies for your
students!

QUADRATIC FORMULA

Algebra 2 Guided Notes

THE QUADRATIC FORMULA

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

Steps for Using the Quadratic Formula

- Step 1: Rewrite the quadratic equation in _____ one side equal to _____.
- Step 2: Identify the values for a, b, and c and _____ the quadratic formula.
- Step 3: _____ the quadratic formula to _____

Directions: Solve each quadratic equation using the quadratic formula. Leave your answer in simplest radical or fraction form.

$x^2 + 3x = 5$	$25x^2 - 8x =$
$-5 \quad -5$ $x^2 + 3x - 5 = 0$ $a=1 \quad b=3 \quad c=-5$	$25x^2 - 8x = 12x - 4$ $-12x + 4 \quad -12x + 4$

Math with Ms. Rivera

Answer key included

why do you need this?



It's simple and done-for-you! Just print and make copies!



Students can work on essential Algebra 2 skills.



Aligns to CCSS, TEKs, and VA SOLs!



Suggested and detailed answer keys are included for you!

Algebra 2 Guided Notes Solving Quadratic Equations with the Quadratic Formula

THE QUADRATIC FORMULA

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

Steps for Using the Quadratic Formula	Step 1: Rewrite the quadratic equation in _____ with one side equal to _____.
	Step 2: Identify the values for a, b, and c and _____ them into the quadratic formula.
	Step 3: _____ the quadratic formula to solve for x. Read the directions carefully for how you should leave your answer.

Directions: Solve each quadratic equation using the quadratic formula. Leave your answer in simplest radical or fraction form.

$x^2 + 3x = 5$	$25x^2 - 8x = 12x - 4$

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Algebra 2 Guided Notes: Solving Quadratic Equations using the Quadratic Formula *includes:*

THE QUADRATIC FORMULA

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

Steps for Using the Quadratic Formula	Step 1: Rewrite the quadratic equation in _____ with one side equal to _____.
	Step 2: Identify the values for a, b, and c and _____ them into the quadratic formula.
	Step 3: _____ the quadratic formula to solve for x. Read the directions carefully for how you should leave your answer.

Directions: Solve each quadratic equation using the quadratic formula. Leave your answer in simplest radical or fraction form.

$x^2 + 3x = 5$	$25x^2 - 8x = 12x - 4$

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- ✓ 1 page of guided notes
- ✓ Steps for Using the Quadratic Formula
- ✓ Applying the Quadratic Formula

Algebra 2 Guided Notes: Solving Quadratic Equations using the Quadratic Formula *includes:*

 Detailed answer keys

CCSS: HSA-REI.B.4

TEKS: A2.4.F

VA SOLs: EI.AII.3.b

THE QUADRATIC FORMULA

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

Steps for Using the Quadratic Formula	Step 1: Rewrite the quadratic equation in <u>standard form</u> with one side equal to <u>0</u> .
	Step 2: Identify the values for a, b, and c and <u>plug</u> them into the quadratic formula.
	Step 3: <u>Evaluate</u> the quadratic formula to solve for x. Read the directions carefully for how you should leave your answer.

Directions: Solve each quadratic equation using the quadratic formula. Leave your answer in simplest radical or fraction form.

$x^2 + 3x = 5$ $x^2 + 3x - 5 = 0$ $a = 1 \quad b = 3 \quad c = -5$ $x = \frac{-3 \pm \sqrt{(3)^2 - 4(1)(-5)}}{2(1)}$ $x = \frac{-3 \pm \sqrt{9 + 20}}{2}$ <div style="border: 1px solid red; padding: 5px; display: inline-block;"> $x = \frac{-3 \pm \sqrt{29}}{2}$ </div>	$25x^2 - 8x = 12x - 4$ $-12x + 4 \quad -12x + 4$ $25x^2 - 20x + 4 = 0$ $a = 25 \quad b = -20 \quad c = 4$ $x = \frac{20 \pm \sqrt{(-20)^2 - 4(25)(4)}}{2(25)}$ $x = \frac{20 \pm \sqrt{400 - 400}}{50}$ $x = \frac{20 \pm \sqrt{0}}{50} \rightarrow \sqrt{0} = 0$ <div style="border: 1px solid red; padding: 5px; display: inline-block;"> $x = \frac{20}{50} \leftarrow \text{one solution}$ </div>
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Check out what *other teachers* are saying:



"This was great practice for my Algebra II students after I presented the lesson. Next Year, I may use them as notes."

- Vonda B.



"Great resource for what we were currently covering in precalc!"

- Megan M.



"I used this in conjunction with another document, but this would have worked fine on its own. The students found it much easier to understand the concept using these guided notes."

- Cheryl W.

You may also enjoy ...

THE DISCRIMINANT

Algebra 2 Guided Notes

THE DISCRIMINANT

The discriminant is used to determine the number and types of solutions of a quadratic equation.

The Discriminant	$b^2 - 4ac > 0$	$b^2 - 4ac = 0$	$b^2 - 4ac < 0$
Number of Solutions	2 real solutions	1 real solution	no real solutions
Graph of $y = ax^2 + bx + c$			
Number of x-intercepts	2 x-intercepts	1 x-intercept	no x-intercepts

Answer key included

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PROJECTILE MOTION

Algebra 2 Guided Notes

APPLICATION: PROJECTILE MOTION

Dropped Object

Launched Object

APPLICATION: PROJECTILE MOTION

Dropped Object

Launched Object

1. An egg is dropped from the top of a building at a height of 50 ft. How long will it take for the egg to hit the ground?

2. The height of a baseball can be modeled by the function $h = -16t^2 + 96t + 3$. How long does the baseball go?

Answer key included

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IMAGINARY NUMBERS

Algebra 2 Guided Notes

IMAGINARY NUMBERS

Complex Numbers

Pure Imaginary Numbers

Pattern of i

$i^2 = \sqrt{-1} \cdot \sqrt{-1} = -1$

$i^3 = i^2 \cdot i = -1 \cdot i = -i$

$i^4 = i^3 \cdot i = -i \cdot i = -i^2 = -(-1) = 1$

$i^5 = i^4 \cdot i = 1 \cdot i = i$

Answer key included

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Check out the *year-long bundle!*

ALGEBRA 2 GUIDED NOTES Year-Long Bundle

TRANSFORMATIONS OF FUNCTIONS

Type of Transformation	f(x) Notation
Reflection	$-f(x)$
Vertical Dilation	$af(x)$ $0 < a < 1$ $ a > 1$
Horizontal Dilation	$f(bx)$ $0 < b < 1$ $ b > 1$
Vertical Translation	$f(x) + k$

LINEAR REGRESSION

SCATTER PLOT
Definition: A graph of _____ points that are _____

SCATTER PLOT RELATIONSHIPS

LINE OF BEST FIT
Definition: A line that _____ as close as possible to all _____

LINEAR REGRESSION
Definition: A linear model that is used to _____ between two variables.

LINEAR INTERSECTIONS
Estimating Slope: _____
Slope: _____
Y-intercept: _____

GRAPHING QUADRATIC TRANSFORMS

Reflection over the x-axis: _____

COMPOSITION OF FUNCTIONS

Definition: To make the _____ another function.

Things to remember:

- Always start with the _____ the function on the _____
- Tag does not always equal _____

$(f \circ g)(x) = \dots$ is also _____

$g(x) = 2x + 3$ and $g(x) = x^2$, find $(f \circ g)(x)$

$g(x) = 2x + 3$ and $g(x) = x^2$, find $(g \circ f)(x)$

COMPOUND INEQUALITIES

A compound inequality has two separate inequalities joined by _____

The graph of the _____ is the _____

$x > 3$

POLYNOMIAL FUNCTION CHARACTERISTICS

Multiplicities	Touch	Inflection

RELATIVE EXTREMA (Minimum or Maximum)
Points on the graph that help to describe the _____ of a function. They are also called _____ or _____

INCREASING INTERVALS
The interval between _____ y-values _____ as the x-value _____

DECREASING INTERVALS
The interval between _____ y-values _____ as the x-value _____

POSITIVE INTERVALS
Intervals where _____

PROPERTIES OF RATIONAL EXPONENTS & RADICALS

Property	Properties of Rational Exponents
Product of Powers	Definition
Power of a Power	
Power of a Product	
Negative Exponent	
Zero Exponent	
Quotient of Powers	
Power of a Quotient	

Directions: Use the properties of rational exponents to simplify _____

Answer key included

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hey there!

My name is Malia and I'm passionate about making learning and practicing math fun. I love creating engaging math resources for my students and I hope your students enjoy these Solving Quadratic Equations with the Quadratic Formula guided notes for Algebra 2 that can be used all year long!

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