

keep scrolling to get a
sneak peak!

This set of guided
notes will walk Algebra
2 students
through operations with
complex numbers.
All you need to do is print
& make copies for your
students!

COMPLEX NUMBERS

Algebra 2 Guided Notes

COMPLEX CONJUGATION

Complex Conjugate Pairs

Complex numbers that have the same real parts (a) and _____
(b). Conjugates always come in _____!

Write the conjugate of each complex number.

$5i + 7$	$-2 + i$
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Determine the conjugate of the complex number and write it in the box.

OPERATIONS OF COMPLEX NUMBERS

Sum & Difference of Complex Numbers

Add or subtract the real parts and their imaginary parts.

Sum of Complex Numbers: $(a+bi)+(c+di)=(a+c)+(b+d)i$

Difference of Complex Numbers: $(a+bi)-(c+di)=(a-c)+(b-d)i$

Directions: Add or subtract each expression. Write your answer in standard form.

$(8 - i) + (5 + 4i)$ $(8+5) + (-1+4)i$ $13 + 3i$	$(7 - 6i) - (3 - 6i)$ $(7-3) + (-6+6)i$ 4
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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.

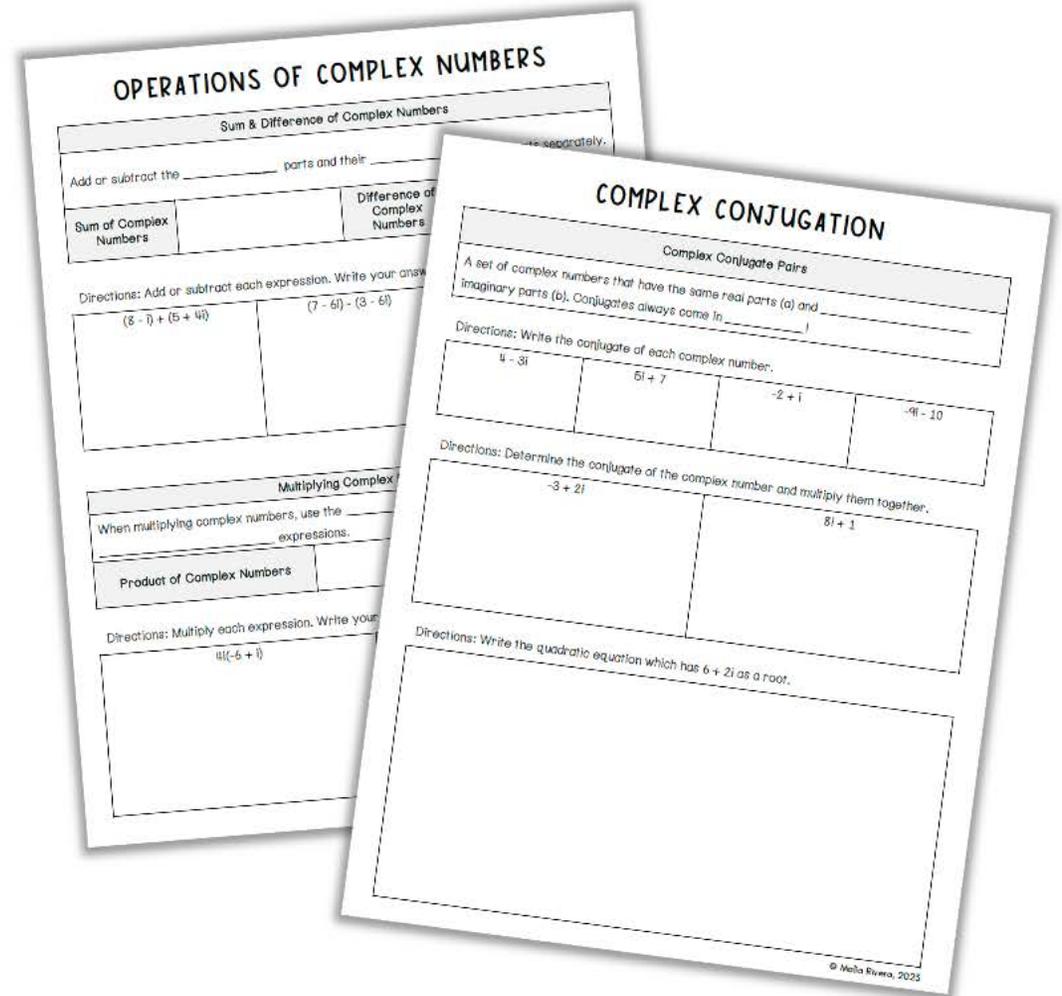


Aligns to CCSS, TEKS, and VA SOLs!

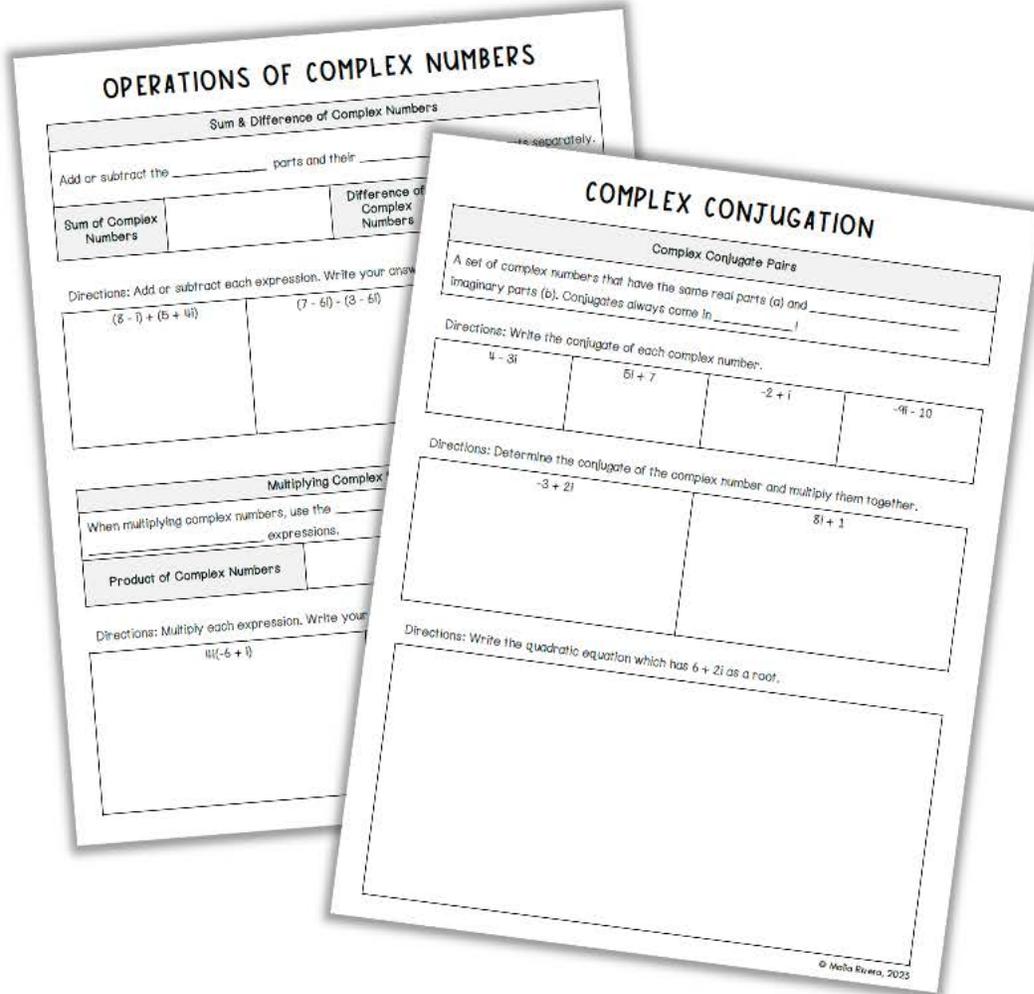


Suggested and detailed answer keys are included for you!

Algebra 2 Guided Notes Operations with Complex Numbers



Algebra 2 Guided Notes: Operations with Complex Numbers *includes:*



- ✓ 2 pages of guided notes
- ✓ Definition of a Complex Number
- ✓ Operations with Complex Numbers
- ✓ Complex Conjugation
- ✓ Writing Quadratic Equations with Complex Roots

Algebra 2 Guided Notes: Operations with Complex Numbers *includes:*

✓ Detailed answer keys

CCSS: HSN-CN.A.1, HSN-CN.A.2, HSN-CN.A.3

TEKs: A2.7.A

VA SOLs: EO.AII.2

OPERATIONS OF COMPLEX NUMBERS

Sum & Difference of Complex Numbers

Add or subtract the real parts and their imaginary parts separately.

Sum of Complex Numbers: $(a+bi)+(c+di)=(a+c)+(b+d)i$

Directions: Add or subtract each expression.

$(8-1) + (5+4i)$ $(8+5) + (-1+4)i$ $13 + 3i$	$(7-3)$
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COMPLEX CONJUGATION

Complex Conjugate Pairs

A set of complex numbers that have the same real parts (a) and opposite imaginary parts (b). Conjugates always come in pairs!

Directions: Write the conjugate of each complex number.

$4-3i$ $4+3i$	$5i+7$ $7-5i$	$-2+i$ $-2-i$	$-9i-10$ $-10+9i$
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Directions: Determine the conjugate of the complex number and multiply them together.

$-3+2i$ conjugate: $-3-2i$ $(-3+2i)(-3-2i)$ $-3(-3) - 3(-2i) + 2i(-3) + 2i(-2i)$ $9 + 6i - 6i - 2i^2$ $9 + 2$ 11	$8i+1$ conjugate: $1-8i$ $(8i+1)(1-8i)$ $8i(1) + 8i(-8i) + 1(1) + 1(-8i)$ $8i - 64i^2 + 1 - 8i$ $8i - 64i^2 + 1 - 8i$ $64 + 1$ 65
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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 ...

SOLVING QUADRATICS WITH IMAGINARY SOLUTIONS

Algebra 2 Guided Notes

SOLVING QUADRATIC EQUATIONS WITH IMAGINARY SOLUTIONS

Two Imaginary Solutions

Discriminant Value

Graph of $y = ax^2 + bx + c$

Number of X-Intercepts

Directions: Solve each quadratic equation using the given method.

Solve $3x^2 + 12x + 16 = 0$ by completing the square.

Solve $-x^2 + 3x - 4 = 0$ by completing the square.

Answer key included

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NONLINEAR SYSTEMS OF EQUATIONS

Algebra 2 Guided Notes

NONLINEAR SYSTEMS OF EQUATIONS

Solutions for Linear-Quadratic Systems of Equations

Types of Solutions for Quadratic-Quadratic Systems

NO SOLUTION

1 SOLUTION

Directions: Solve the system graphically.

$x^2 + 5x - 1 = -x^2 + 2x + 1$

EQ1: $x^2 + 5x - 1 = y$

EQ2: $-x^2 + 2x + 1 = y$

solutions: $(-2, -7) + (0.5, 1.75)$

Answer key included

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SOLVING QUADRATIC INEQUALITIES

Algebra 2 Guided Notes

SOLVING QUADRATIC INEQUALITIES

Ways to write a quadratic inequality in one variable

$0 < ax^2 + bx + c$

$0 \leq ax^2 + bx + c$

$0 > ax^2 + bx + c$

$0 \geq ax^2 + bx + c$

Directions: Solve $x^2 - 3x - 4 < 0$.

Algebraically

$ac = -4 \cdot -4 = 16$

$b = -3$

$x^2 - 3x - 4 = 0$

$(x^2 - 4x) + (x - 4) = 0$

$x(x - 4) + 1(x - 4) = 0$

$(x + 1)(x - 4) = 0$

EPF: $x + 1 = 0$

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 _____

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 _____

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

COMPOUND INEQUALITIES

Compound inequality has two separate inequalities joined by _____

Graph of a compound inequality with "and" of the graphs of the inequalities _____

$x > 3$

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: $1. (y^{1/2} \cdot y^{1/3})^2$

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ANSWER KEY INCLUDED



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 Operations with Complex Numbers guided notes for Algebra 2 that can be used all year long!

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