

Algebra 2
Review: Complex Numbers

Name Key
 Date _____

Students add, subtract, multiply, and divide complex numbers. Write answers in standard form.

1. Simplify $(18 - 4i) + (48 + 7i)$.

$$66 + 3i$$

only Combine Like Terms

2. Simplify $(11 - 17i) + (4 + 13i)$. *Distribute negative*

$$7 - 4i$$

CLT

3. Simplify $(7 - i)(5 + 2i)$.

$$35 + 14i - 5i + 2i^2$$

$$37 + 9i$$

4. Simplify $3(5 - 3i) + (5 - 2i)(5 + 2i)$.

$$15 - 9i + 29$$

$$44 - 9i$$

5. Simplify $\frac{(3 + 2i)(2 + 3i)}{(2 - 3i)(2 + 3i)}$

$$= \frac{6 + 4i + 9i + 6i^2}{13}$$

$$= \frac{13i}{13}$$

$$= i$$

6. Simplify $\frac{2(6 + 2i)}{(6 - 2i)(6 + 2i)} - 4$.

mult by conjugate

$$\frac{12 + 4i}{40} - 4$$

Dist; simplify

$$= \frac{3 + i}{10} - \frac{4(10)}{10}$$

reduce fraction; find LCD

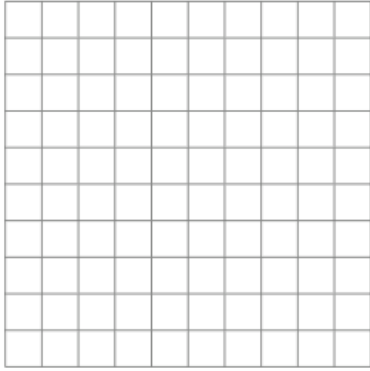
$$= \frac{3 + i - 40}{10}$$

$$= \frac{-37 + i}{10}$$

OR

$$= \frac{-37}{10} + \frac{1}{10}i$$

Algebra 2
Review: Complex Numbers

<p>Solve quadratic equations with real coefficients that have complex solutions. Leave answers in standard form $a + bi$</p>	<p>Evaluate and graph complex numbers</p>
<p>1. Solve $\frac{1}{3}(x+2)^2 + 12 = 0$</p>	<p>1. Plot the following a. $-4i$ b. 3 c. $7-2i$ d. $-4+4i$.</p> 
<p>2. Solve by completing the square: $x^2 - 12x + 76 = 0$</p>	<p>2. If $i = \sqrt{-1}$, then find the following:</p> <p>a. i^3</p> <p>b. i^{33}</p> <p>c. i^{249}</p> <p>Explain:</p>
<p>3. Solve using the quadratic formula: $2x^2 - 3x + 7 = 0$</p>	