Honors Math 2 Name_____
2.3 Notes Period_____Date_____

Bell work:
Simplify the following:
$\sqrt{12}$ $\sqrt{20}$ $\sqrt{18}$ $\sqrt{32}$

Solve the following equations for x.

$x^2 = 4$

$x^2 = 9$

$x^2 = 25$

$x^2 = 20$

Solve for x.
$x^2 - 7 = 0$ $x^2 - 12 = 0$

$2x^2 - 8 = 0$ $\frac{1}{2}x^2 - 7 = 13$

Solve for x.
$x^2 + 12 = 3$ $3x^2 - 7 = -31$

Complex Number System

What happens when you end up with a square root of a negative number?

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

i can be used to simplify the following radicals.

$\sqrt{-9}$ $\qquad$ $\sqrt{-8}$

Solve:

$4x^2 + 34 = 2$ $\qquad$ $x^2 + 15 = 3$

$\frac{1}{4}x^2 + 4 = -1$

Complex number in standard form:

a + bi

real imaginary

Conjugate of a complex number

a + bi ⇒ a - bi

opposite of the imaginary part

Add and subtract complex numbers:

$(8 - i) + (5 + 4i)$	$(7 - 6i) - (3 - 6i)$
$10 - (6 + 7i) + 4$	$-4 - (1 + i) + (5 + 9i)$

Multiply complex numbers.

$4i(-6 + i)$	$(9 - 2i)(-4 + 7i)$

Dividing complex numbers.

$\frac{6}{2i}$	$\frac{7 + 5i}{1 - 4i}$

Simplifying higher powers of $\boldsymbol{i}$

i^{10}

i^{147}