Warmup:

$\sqrt{-44}$

$i\sqrt{44} = \boxed{2i\sqrt{11}}$

$-3\sqrt{-50}$

$-3\sqrt{50}$

$-3 \cdot i\sqrt{50} = -3 \cdot i \cdot 5\sqrt{2}$

$\boxed{-15i\sqrt{2}}$

$4\sqrt{-121}$

$4i\sqrt{121} = 4 \cdot i \cdot 11 = \boxed{44i}$

i^8

$$8 \div 4 = 2.0$$

$i^8 = 1$

i^{13}

$$13 \div 4 = 3.25$$
$$\overline{R1}$$

$i^{13} = i \text{ or } \sqrt{-1}$

i^{74}

$$74 \div 4 = 18.5$$
$$\overline{R2}$$

$i^{74} = -1$

$i^0 = 1$

$i^1 = i \text{ or } \sqrt{-1}$

$i^2 = -1$

$i^3 = -i$

Add and Subtract:

$(3 + i) + (4 + 2i)$

$7 + 3i$

$(8 + 3i) - (6 - 2i)$

$2 + 5i$

$(-7 + 5i) + (1 - 2i)$

$-6 + 3i$

$(-3 - 5i) - (3 - i)$

$-6 - 4i$

Algebra 2
HW #3: Adding and Subtracting Complex Numbers

Name: _____key_____

$i\sqrt{200}$ < $\frac{100}{2}$ < $\frac{10}{10}$

Simplify each of the following radicals

1) $\sqrt{-16}$

$4i$

2) $\sqrt{-20}$

$2i\sqrt{5}$

3) $\sqrt{-200}$

$10i\sqrt{2}$

4) $-3\sqrt{-8}$ (2) < $\frac{4}{2}$ (-2) 2

$-6i\sqrt{2}$

5) $-\sqrt{-40}$

$-2i\sqrt{10}$

6) $-5\sqrt{-24}$

$-10i\sqrt{6}$

Simplify each of the following powers of i

7) i^{21} $= \sqrt{-1}$

or i

8) i^{18} $= -1$

9) i^{33} $= \sqrt{-1}$

or j

10) $i^{15} = -i$

11) i^{42} $= -1$

12) i^{28} $= 1$

13) i^{400} $= 1$

14) i^{103} $= -i$

Remainder

0	0
.25	1
.5	2
.75	3

$i^0 = 1$

$i^1 = i$

$i^2 = -1$

$i^3 = -i$

Add or Subtract each of the following complex numbers

15) $(-1 + 3i) - (i)$

$-1 + 2i$

16) $(-6 + 6i) + (8i)$

$-6 + 14i$

17) $(-4i) - (2 - 7i)$ $-4i \lessgtr 7i$

$-2 + 3i$

18) $(6 - 7i) - (6i)$ $-7i - 6i$

$6 - 13i$

19) $(-2i) + (6i)$

$+4i$

20) $(2i) - (4i)$

$-2i$

21) $(-6i) - (1 - 4i) - 6$

$-7 - 2i$

22) $(6 - 8i) + (-8 - 3i)$

$-2 - 11i$

23) $(-3 - 4i) - (-8 + 3i)$

$5 - 7i$

24) $(7 - 5i) - (8 - 7i)$

$-1 + 2i$

25) $(-8 - 5i) - (-8 + 3i)$

$-8i$

26) $(4 + 2i) - (-1 - 4i)$

$5 + 6i$

27) $8 + (1 + 5i) - (-4 + 3i)$

$13 + 2i$

28) $(-2 - 3i) - (-5 + 6i) + (-2 - 4i)$

$1 - 13i$

29) $(-8 - 8i) + (-3 - 5i) - (-4 + 8i)$

$-7 - 21i$

30) $(-1 + 7i) + 6 + (-7 - 4i)$

$-2 + 3i$

Review for Quiz

Answer key is posted on side board!!

Quiz #1

No HW Today!!