Happy Friday!

Have both homework assignments on desk!

Do Now:

Simplify:

$-3+4i$

$2i \cdot 4i$

$8i^2 = -8$

$3x+4$

$3x \cdot 4 = 12x$

$-3\sqrt{-16}$

$-3 \cdot 4i$

$-12i$

$(i^3)^3 = i^9$

$= i$

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

$4i+3-2i$

$2i+3$

$3+2i$

24) $(6i)^3$

$6^3 i^3$

$216 i^3$

$-216i$

$i^3 = -i$

k) $(8-6i)(-4-4i)$

$i^2 = -1$

$-32 - 32i + 24i + 24i^2$

$-32 - 8i + \cancel{24i^2}$

$-32 - 8i - 24$

$-56 - 8i$

# Simplifying Radicals

## Perfect Squares:

$\sqrt{16} = 4$

$\sqrt{25} = 5$

$\sqrt{-16} = 4i$

$\sqrt{-25} = 5i$

$\sqrt{x^2} = \sqrt{81}$

$x = \pm 9$

$x = 9$

$x = -9$

$\sqrt{x^2} = \sqrt{-81}$

$x = \pm\sqrt{-81}$

$x = \pm 9i$

# Simplifying Radicals

Not Perfect Squares!!

Factor out the perfect square!

Hidden square factor:

$\sqrt{8} = \sqrt{4 \cdot 2} = 2\sqrt{2}$

$\sqrt{18} = \sqrt{9 \cdot 2}$

$= 3\sqrt{2}$

$\sqrt{-24} = \sqrt{4 \cdot 6}\, i = 2i\sqrt{6}$

$\sqrt{-50} = \sqrt{25 \cdot 2}\, i = 5i\sqrt{2}$

# Simplifying Radicals

## Not Perfect Squares!!

*NO* Hidden square factor: Leave it!

$\sqrt{17}$

$\sqrt{10}$

$\sqrt{-23} = i\sqrt{23}$

$\sqrt{-35} = i\sqrt{35}$

# Homework Solutions:

$i^{(30)} = -1$

$i^{(210)} = -1$

$3i^7 = 3(-i) = -3i$

$-25i^{(25)} = -25i$

$i + i^3 = i + (-i) = 0$

$i^{(19)} - i^{(16)} = i - 1$

$3i^4 + 5i^6 = 3(1) + 5(-1) = -2$

$\frac{i^{(37)}}{i^{(35)}} = i^2 = -1$

$i^{(102)} \bullet i^{(-98)} = i^4 = 1$

$(i^2)^3 = i^6 = -1$

Homework: Operations with Complex Numbers worksheet!

Exit Slip: Solve for x

$x^2 = -100$

$x^2 + 5 = 30$