Monday, September 19, 2016: Late Start

2.4 Practice
P6 Review of Complex Numbers

P6 Complex Numbers

complex number : $a + bi$

a = real number
bi = imaginary number

$i = \sqrt{-1}$

$i^2 = -1$

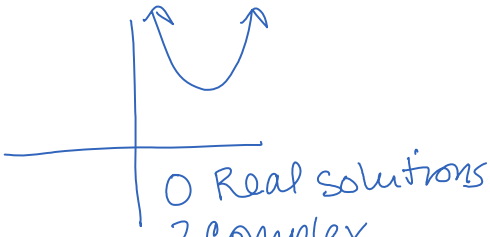
$i^3 = i \cdot i^2 = -1i = -i$

$i^4 = i^2 \cdot i^2 = -1 \cdot -1 = 1$

$\sqrt{-64} = \sqrt{-1 \cdot 64} = 8i$

$\sqrt{-12} = \sqrt{-1 \cdot 4 \cdot 3} = 2i\sqrt{3}$

$\sqrt{-48} = \sqrt{-16 \cdot 3} = 4i\sqrt{3}$



Adding / Subtracting / Multiplying Complex Numbers

(1) $(2 + 3i) + (5 - 2i) = 7 + i$

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

② $(5-5i)-(7+2i) = -2-7i$

③ $(4+i)(3+6i) = 12+24i+3i+6i^2$ $\boxed{i^2=-1}$

FOIL

$= 12+27i-6$

$= 6+27i$

④ $(3-2i)(4+5i) = 12+15i-8i-10i^2$

FOIL

$12+7i+10$

$\boxed{22+7i}$

Multiplying by Conjugate

⑤ $(2+3i)(2-3i) = 4+6i-6i-9i^2$

$= 4+9$

$= 13$