Monday, September 21, 2015 9:54 AM

$i^{63} = -i$ $\quad i^{62} = -1$

$\frac{63}{4} = 15\frac{3}{4}$ $\quad \frac{62}{4} = 15\frac{2}{4}$

P6 Complex #'s

Imaginary #'s: $\sqrt{-1} = i$

$i = i \quad i^2 = -1 \quad i^3 = -i \quad i^4 = 1$

$i^5 = i$

$(\sqrt{-1})^2 \quad i^2 \cdot i \quad i^2 \cdot i^2 \quad -1 \cdot -1 \quad i^4 \cdot i$

$\sqrt{-4} = 2i \quad \sqrt{-16} = 4i \quad \sqrt{-17} = i\sqrt{17}$

Complex #'s: $a + bi$

real # $\quad$ Imaginary #

$8 = 8 + 0i \quad 3 + 2i$

$3+2x \quad + \quad 4-3x$

(1) $(3+2i) + (4-3i) = 7 - i$

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

$-7 + 2i$

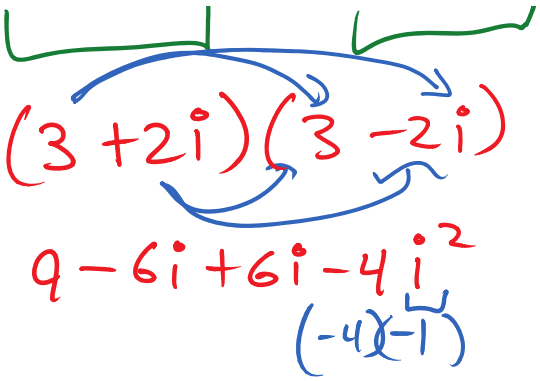
(3) $(2+3i)(4-4i)$ $\quad -1$ $\quad 20+4i$

$8 - 8i + 12i - 12(i^2)$

Complex Conjugates

$(a+b) \Rightarrow (a-b)$

$(a+bi) \Rightarrow (a-bi)$



$\frac{24+16}{2}^{3}$

$\frac{\cancel{24}+16}{\cancel{2}}$

1

(13)

$$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$$

① $x^2+2x+5=0$

$$\frac{-2 \pm \sqrt{4-20}}{2} = \frac{-2 \pm \sqrt{-16}}{2} = \frac{-1 \pm 4i}{2}$$

$$x = -1 \pm 2i$$

② $4x^2-6x+5 = x+1$

$4x^2-7x+4$

$$\frac{7 \pm \sqrt{-15}}{8} = \frac{7 \pm i\sqrt{15}}{8}$$

$(x-(-1+2i))(x-(-1-2i))$

x^2+2x+5