April 8, 2015

10.7

#4) $-\sqrt{-\frac{4}{9}} = -\frac{\sqrt{-4}}{\sqrt{9}}$

FACT

$-\frac{a}{b} = \frac{-a}{b} = \frac{a}{-b}$

$= -\frac{2i}{3}$

$= -\frac{2}{3}i$ $(a+bi)$

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#5) $10\sqrt{-48}$

$10i\sqrt{48}$

$10i\sqrt{16 \cdot 3}$

$40i\sqrt{3}$

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$a + bi$

addition

$(4 + 5x) + (2 + 3x)$

$(4+2) + (5+3)x$

$6 + 8x$

$(a + bi) + (c + di)$

$(a+c) + (b+d)i$

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$(\overset{a}{5} - \overset{b}{2}i) + (\overset{c}{3} + \overset{d}{9}i)$

$(5+3) + (-2+9)i$

$8 + 7i$

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$(-4 + 5i) - (11 + 2i)$

$(-4 + (-11)) + (5 + (-2))i$

$-15 + 3i$

$a + bi$

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Multiplication

$(2 + 3x)(4 + 5x)$ FOIL

F O I L

$8 + 10x + 12x + 15x^2$

$8 + 22x + 15x^2$

$3i(4) = 12i$

$(0 + 3i)(4 + 0i)$

F O I L

$0 + 0 + 12i + 0$

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$(-5i)(2i)$ $\quad i^2 = -1$

$-10i^2$

$-10 \cdot (-1)$

10

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$(6i + 2)(3 - 4i)$ (F, O, I, L)

$18i - 24i^2 + 6 - 8i$

$18i - 24(-1) + 6 - 8i$

$10i + 30$

$30 + 10i$

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① $(2 - 11i)^2 = (2 - 11i)(2 - 11i)$

$= 4 - 22i - 22i + 121i^2$

$= -117 - 44i$

② $(2 + 11i)(2 - 11i)$ (F)

Conjugate Pairs

$4 - 121i^2$

$4 + 121 = 125$

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$\frac{4}{i} \cdot \frac{-i}{-i} = \frac{-4i}{-i^2} = -4i$

$\frac{(4 + 0i)}{(0 + 1i)} \cdot \frac{(0 - 1i)}{(0 - 1i)}$

$\frac{0 - 4i + 0 + 0}{0 - i^2}$

$\frac{-4i}{-(-1)} = \frac{-4i}{1}$

$= -4i$

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Do 10.7 #6 – #17

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