

April 8, 2015

10.7

#1)  $\sqrt{-72} = i\sqrt{72}$   
 $= i\sqrt{9 \cdot 8}$   
 $= i \cdot 3\sqrt{8}$   
 $= i \cdot 3 \cdot 2 \cdot \sqrt{2}$   
 $= 6i\sqrt{2}$

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#4)

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

FACT

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

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

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

$$= 0 - \frac{2}{3}i$$

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#3)

$$\sqrt{-\frac{9}{16}} = \frac{\sqrt{-9}}{\sqrt{16}}$$

$$= \frac{3i}{4}$$

$$= \frac{3}{4}i$$

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#7)

$$\sqrt{-12} \cdot \sqrt{-48}$$

$$2i\sqrt{3} \cdot 4i\sqrt{3}$$

$$8 \cdot i^2 \cdot 3$$

$$24(-1)$$

$$-24$$

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Multiplication

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

$$15 + 6x + 20x + 8x^2$$

$$15 + 26x + 8x^2$$

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$$5i(3) = 15i$$

FOIL

$$(0 + 5i)(3 + 0i)$$

$$0 + 0 + 15i + 0$$

$$15i$$

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$$(-2 + 4i)(3 - 5i) \text{ FOIL}$$

$$-6 + 10i + 12i - 20i^2$$

$$14 + 22i$$

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①  $(3 + 5i)^2 = -16 + 30i$

②  $(3 + 5i)(3 - 5i) = 34$

*Conjugate Pairs*

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

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

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

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

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$$\frac{-6 + 2i}{3 - 5i} \cdot \frac{3 + 5i}{3 + 5i}$$

$$\frac{-18 - 30i + 6i + 10i^2}{9 - 25i^2}$$

$$\frac{-28 - 24i}{34}$$

$$-\frac{28}{34} + (-\frac{24}{34})i$$

$$-\frac{14}{17} - \frac{12}{17}i$$

Do 10.7 #6 - #17  
*for 7.11*

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