April 7, 2015

Due Today

① Copy of "Current" SSC.

② Copy of "What If" SSC.

③ My "Dig Deep" (Typed) Commitment Statement answer the following:

a.) State your final class goal - "outcome" you want in this class.

b.) Outline your action plan- the steps you will need to take to meet your goal Be Specific!!

c.) Statement of your "Dig Deep" Commitment to yourself.

Apr 7-10:50 AM

$x^2 + 4 = 0$

$-4 \quad -4$

$\sqrt{x^2} = \pm\sqrt{-4}$

$x = \pm 2i$

Check

$x = 2i$

$(2i)^2 + 4 = 0$

$(2i)(2i) + 4 = 0$

$4 \cdot i^2 + 4 = 0$

$4 \cdot (-1) + 4 = 0$

$-4 + 4 = 0$

$0 = 0$ ✓

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FACTS

① $\sqrt{-1} = i$

② $i^2 = -1$

$i^2 = -1$?

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

$= \sqrt{-1 \cdot -1} = \sqrt{(-1)^2}$

$= -1$

③ $i^3 = i^2 \cdot i^1$

$= (-1) \cdot i$

$= -i$

④ $i^4 = i^2 \cdot i^2$

$= (-1) \cdot (-1)$

$= 1$

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$\sqrt{-4} \cdot \sqrt{-9} \neq \sqrt{(-4)\cdot(-9)}$

$\neq \sqrt{36}$

$\neq 6$

Complex Numbers

$2i \cdot 3i$

$6 \cdot i^2$

$6 \cdot (-1)$

-6

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② even $\sqrt{-8}$ Complex

$i\sqrt{8}$

$2i\sqrt{2}$

③ odd $\sqrt{-8}$ Real

-2

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The Form of a Complex Number

$a + bi$

where $\{a \& b \in \mathbb{R}\}$

Examples

$9 + 0i = 9 + 0 = 9$

$-7i = 0 + (-7)i$

$= -7i$

$2 - 5i$

$\frac{-11 + 7i}{2} = -\frac{11}{2} + \frac{7}{2}i$

Is not in $a + bi$ form

$a + bi$ form

Apr 7-11:33 AM

addition of Complex Numbers

as a help!

$(2+3x)+(5+7x)$

$2+3x+5+7x$

$(2+5)+(3+7)x$

$7+10x$

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

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

Apr 7-11:39 AM

$(2+3i)+(\sqrt{5}-6i)$

$2+\sqrt{5}+(-3)i$

$2+\sqrt{5}-3i$

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$(-4-i)-(5+7i)$

$a \quad b \quad c \quad d$

$-4+(-1)i-5+(-7)i$

$(-4+(-5))+((-1)+(-7))i$

$-9-8i$

Do 10.7 #1 - #5

Apr 7-11:47 AM