

April 7, 2015  
 Due Tuesday

- ① Copy of Current SDC
- ② Copy of "What If" SDC
- ③ My "Dig Deep" Commitment to myself (Typed)

Answer the following:

- a) State your final goal - outcome you want in this class
- b) Outline your action plan - the steps you will take to meet your goal. *Be specific!!*
- c) Statement of your "Dig Deep" Commitment to yourself

Apr 7-9:57 AM

FACTS

- ①  $\sqrt{-1} = i$
- ②  $i^2 = -1$
- ③  $i^3 = i^2 \cdot i = (-1) \cdot i = -i$
- ④  $i^4 = i^2 \cdot i^2 = (-1) \cdot (-1) = 1$

Apr 7-10:23 AM

$$x^2 + 4 = 0$$

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

Check

$x = 2i$

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

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

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

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

$$-4 + 4 = 0$$

$$0 = 0 \checkmark$$

$$x = \sqrt{(-1) \cdot 4}$$

$$= \sqrt{-1} \cdot \sqrt{4}$$

$$= i \cdot 2$$

$$= \pm 2i$$

Apr 7-10:25 AM

$$\sqrt{-49} = \sqrt{(-1) \cdot 49}$$

$$= \sqrt{-1} \cdot \sqrt{49}$$

$$= i \cdot 7$$

$$= 7i$$


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$$\sqrt{-5} = \sqrt{(-1) \cdot 5}$$

$$= \sqrt{-1} \cdot \sqrt{5}$$

$$= i\sqrt{5}$$

*\* Don't write as  $\sqrt{5}i$*

Apr 7-10:33 AM

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

$$\neq \sqrt{36}$$

$$\neq 6$$

Complex Numbers

$$2i \cdot 3i$$

$$6i^2$$

$$-6$$

Apr 7-10:37 AM

Complex	Real
$\sqrt{-8}$	$\sqrt[3]{-8}$
$i\sqrt{8}$	-2
$2i\sqrt{2}$	

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## The Form of a Complex Number

$$a + bi$$

$$\{a, b \in \mathbb{R}\}$$

Examples

$$5 + 0i = 5 + 0 = 5$$

$$-23i = 0 + (-23)i = -23i$$

$$\frac{2 - 3i}{-11 + 7i} = -\frac{11}{2} + 2i$$

$\swarrow$   
 $a + bi$

Do 10.7 #1 - #5

Apr 7-10:43 AM