Name: _____ Date: _____ **Unit 5 Class Work**

Introduction to Complex Numbers Class Work

Objective: *You will be able to simplify expressions using the complex number system, and operate within the complex number system.*

Remember the real number system… what do you know about $\sqrt{-1}$?!

✯ We use the letter *i to represent this.*

Practice: Simplify each expression.

1. $\sqrt{-27}$
2. $\sqrt{-12}+2$
3. $5+\sqrt{-60}$

$i =$

$i^2 =$

$i^3 =$

$i^4 =$

Practice: Simplify each expression.

4. i^7
5. i^{21}
6. i^{33}

7. i^{20}
8. i^{42}
9. i^{29}

✯ Standard Form for Complex Numbers:

where a and b are

Practice: Write each expression in standard form.
Then identify the real portion and the imaginary portion.

10. $4i + 5 - (3i - 2)$

11. $9 - (7i + 4)$

12. $(15i + 3) + (2 - \sqrt{-9})$

13. $\sqrt{(-25)} + 4i + (-1 - i)$

14. $6i + 9 - (\sqrt{(-36)} + 3)$

15. $4i + 5 - \sqrt{(-24)} - 7$

* Create any expression that simplifies to $4i$.

* Create any expression that simplifies to $-i^3$.

* Create any expression that simplifies to $2 - 2i$.

Write a "tweet" for which the hashtag #WhatIKnowAboutComplexNumbers would be appropriate. Post it on the board, and then "star" your favorite! ☺