

Warm-Ups – Thursday, November 19, 2020 – Algebra II

Simplify each expression:

1) $(2 + 3a) - (5 - 2a)$

2) $2a(5 - 3a)$

3) $(5 + 2a)(3 + a)$

4) $3a(5 - 7a) + 4(2 + 3a)$

Introduction to Complex numbers:

$$a + bi$$

Powers of “i”:

Matters of faith:

$$(\sqrt{4})^2 =$$

$$(\sqrt{25})^2 =$$

$$(\sqrt{7})^2 =$$

$$(\sqrt{\pi})^2 =$$

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

$$(i)^2 =$$

Recall that $i = \sqrt{-1}$

So.....

$$i =$$

$$i^2 =$$

$$i^3 =$$

$$i^4 =$$

$$i^5 =$$

$$i^6 =$$

$$i^7 =$$

$$i^8 =$$

What is i^{112} ?

What about i^{115} ?

Operations with Complex Numbers:

Simplify each expression: (see today's warm-ups for a short-cut.)

All answers should be in the form $a + bi$.

1) $(2 + 3i) - (5 - 2i)$

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

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

4) $3i(5 - 7i) + 4(2 + 3i)$

5) $(2 + \sqrt{-9}) - (5 - \sqrt{-4})$

6) $(5 + \sqrt{-4})(3 + \sqrt{-1})$

Remember:

$$i^1 = i$$

$$i^2 = -1$$

$$i^3 = -i$$

$$i^4 = 1$$