4.8 Complex Numbers

a. I can identify and understand properties of complex numbers.
b. I can use my knowledge of complex numbers to perform basic operations.

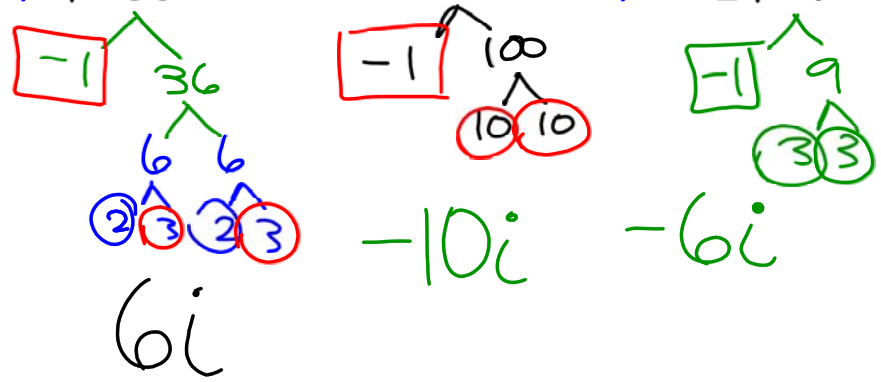
p.66-67 Operations w/Complex Numbers 4.8

p.66

Warm-up

Simplify the following completely (remember $i = \sqrt{-1}$)

1) $\sqrt{-36}$ 2) $-\sqrt{-100}$ 3) $-2\sqrt{-9}$



p.66-67 Operations w/Complex Numbers 4.8

p.66

Complex Numbers

*imaginary unit: $i = \sqrt{-1}$ $i^2 = -1$

standard form $a + bi$

Simplify the following by performing the indicated operation

1) $(3+5i)+(2-4i)$ 5+1i

2) $(4+i)+(12-5i)$ 16−4i

Simplify the following by performing the indicated operation

3) $(4-6i)-(3-7i)$

$-3+7i$

$1+1i$

4) $(10 - 6i) - (25 + 3i)$

$-25-3i$

$-15-9i$

Simplify the following by performing the indicated operation

$i^2 = -1$

5) $(-4i)(9i)$

$-36i^2$

$(-36)(-1)$

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6) $6i\,(20i^2)$

$6i(20)(-1)$

$6i(-20)$

$-120i$

Simplify the following by performing the indicated operation

7) $4i\,(7+4i)$

$28i + 16i^2$

$28i + (16)(-1)$

$-16 + 28i$

8) $(4+2i)(6-3i)$

$24 - 12i + 12i - 6i^2$

$24 - 6(-1)$

$24 + 6$

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Assignment: Complex Number Maze

Complete the maze by simplifying EACH expression. Shade the squares that have imaginary numbers. You will have a path leading from Start Here square to the End Here Square.