Secondary Math 2 Name_____

2.3: Operations in the Number Systems

Rewrite the following as imaginary.

1) $\sqrt{-144}$

2) $\sqrt{-65}$

3) $\sqrt{-4}$

4) $\sqrt{-56}$

Identify the real part and the imaginary part of the following.

5) $-4i - 7$

6) $-9 + i$

Is the sum of the following rational or irrational?

7) $\frac{56}{7} + \sqrt{45}$

8) $\sqrt{576} + \frac{32}{2}$

Is the product of the following rational or irrational?

9) $\sqrt{83} \cdot \frac{32}{2}$

10) $\frac{61}{4} \cdot \sqrt{90}$

11) $\sqrt{5} \cdot \sqrt{5}$

12) $\sqrt{5} \cdot \sqrt{20}$

Add or Subtract the following Complex Numbers. Write in the form $(a + b \cdot i)$

13) $(-3 - 5i) + (12 - 3i)$

14) $(3 + 12i) + (-11 + i)$

15) $(-1 + i) + (4 - 2i)$

16) $(6 + 4i) + (-1 + i)$

17) $(-12 + 4i) + (-1 + i)$

18) $(4 + 6i) - (1 + i)$

19) $(2 - 8i) - (7 - 8i)$

20) $(-10 + 12i) - (-1 + 5i)$

21) $(-4 + 3i) - (-4 + 12i)$

22) $(-5 - 2i) + (-1 - 5i)$

Multilpy the following Complex Numbers.

23) $(3 - 2i)(4 - 2i)$

24) $(3 - 6i)(-8 + 5i)$

25) $(1 - 8i)(6 - 2i)$

26) $(3 - 5i)(5 - 5i)$

27) $(-1 + i)(-6 - 2i)$

28) $(7 - 7i)(8 - 6i)$

29) $(3 - 8i)^2$

30) $(-3 + 7i)^2$

Simplify:

31) $2(2 - 3i) + 4(1 - i)$

32) $-(4 - 9i) - 2(3 + 2i)$