Algebra II Worksheet #7 Unit 5 page 1 _____

Find the indicated absolute values. (Simplify any square roots.)

1. $|4 - 3i| =$ **2.** $|1 + 7i| =$ **3.** $|-3i| =$

Perform the indicated operations. If the answer is a complex number, then write it using **a + bi** form.

4. $(3 + 7i) + (2 - 5i) =$ _____

5. $(8 - 3i) + (4 - i) =$ _____

6. $(4 - 9i) + (-1 + 3i) =$ _____

7. $(8 + 3i) - (5 + 7i) =$ _____

8. $(4 - 3i) - (6 + 2i) =$ _____

9. $(2 + i) - (5 - 4i) =$ _____

10. $(5)(-4i) =$ _____

11. $(2i)(5i) =$ _____

12. $(2i)^3 =$ _____

13. $3i(5 + 2i) =$ _____

14. $(3 - 5i)(4 + 2i) =$ _____

15. $(2 - 7i)(1 - 3i) =$ _____

16. $(2 + 8i)^2 =$ _____

17. $(7 - i)^2 =$ _____

18. $(2 - i)^3 =$ _____

19. $(3 + 5i)(3 - 5i) =$ _____

20. $\frac{2 + 3i}{4i} =$

21. $\frac{5 - 4i}{3i} =$

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Perform the indicated operations. If the answer is a complex number, then write it using **a + bi** form.

22. $\dfrac{3+i}{1+3i}$ =

23. $\dfrac{-3-7i}{2-4i}$ =

Write the additive inverse of each of the following (**a + bi** form).

24. 3 – 5i _____

25. 5 + 2i _____

Write the complex conjugate of each of the following (**a + bi** form).

26. 5 – 3i _____

27. 3 + 5i _____

Write the multiplicative inverse of each of the following (**a + bi** form).

28. 1 – 3i _____

29. 5 + 2i _____

Graph each of the following. Label your graphs.

30. 4 + 9i

31. -8 – 7i

32. -5 + 5i

33. 4 – 8i

34. -8i