

Name: _____ Hr: _____

Complex Numbers

Express each number in terms of i , and simplify.

1. $\sqrt{-36}$

2. $\sqrt{-100}$

3. $-\sqrt{-81}$

4. $2\sqrt{-49}$

5. $-2\sqrt{-3}$

6. $3\sqrt{-11}$

7. $\sqrt{-\frac{1}{4}}$

8. $\sqrt{-\frac{16}{25}}$

9. $\sqrt{-20}$

10. $\sqrt{-28}$

11. $-\sqrt{-10}$

12. $2\sqrt{-75}$

13. $5\sqrt{-8}$

Write each number in terms of i , perform the indicated operation, and write the answer in the form $a+bi$.

14. $\sqrt{-64} + \sqrt{-36}$

15. $3\sqrt{-4} + \sqrt{-121}$

16. $\sqrt{-100} - \sqrt{-9}$

Simplify the following complex numbers. Write your answer in the form $a+bi$.

17. $(2-7i)+(-5-2i)$

18. $(-4+5i)+(-3+i)$

19. $(-2+4i)-(6-3i)$

20. $(2-i)-(-5+8i)$

21. $(-4-3i)+(9-3i)$

22. $(-2-7i)-(-5-9i)$

23. $(4i)(7i)$

24. $(8i)(7+5i)$

25. $(-5i)(3-7i)$

26. $(-3i+1)(4+3i)$

27. $(-7+4i)(1-2i)$

28. $(5-3i)^2$

29. $(4+3i)^2$

Factor.

30. $x^2 + 25$

31. $9x^2 + 4$

32. $2x^2 + 32$

33. $3x^2 + 108$

Solve.

34. $3a^2 = -9$

35. $\frac{x^2}{36} = -1$

36. $x^2 + 36 = 117$

37. $0 = 64 - 4k^2$

38. $9p^2 = 12p - 11$

39. $3a^2 + 9 = 7a$

40. $2 = -2x^2$

41. $4k^2 + 3 = -4k$