

Practice B

For use with pages 272–280

Solve the equation.

- | | | |
|------------------------|-----------------------|----------------------------|
| 1. $x^2 = -64$ | 2. $x^2 + 1 = 0$ | 3. $x^2 + 5 = 14$ |
| 4. $x^2 = -12$ | 5. $x^2 + 48 = 0$ | 6. $x^2 + 3 = -24$ |
| 7. $2x^2 - 9 = 3x^2$ | 8. $x^2 - 16 = 5x^2$ | 9. $11x^2 + 1 = 2x^2$ |
| 10. $-2(x + 1)^2 = 72$ | 11. $4(x - 2)^2 = -1$ | 12. $3(x + 5)^2 + 147 = 0$ |

Plot the number in a complex plane.

- | | | |
|--------------|--------------|---------------|
| 13. $3i$ | 14. -2 | 15. $2 + 4i$ |
| 16. $3 - 4i$ | 17. $-2 + i$ | 18. $-4 - 3i$ |

Write the expression as a complex number in standard form.

- | | | |
|-----------------------------------|-----------------------------------|---|
| 19. $(3 + 2i) + (-5 + 8i)$ | 20. $(-2 - 4i) + (3 - 6i)$ | 21. $(\frac{1}{3} + \frac{1}{2}i) + (\frac{2}{3} - 2i)$ |
| 22. $(4 + 2i) - (-1 + 5i)$ | 23. $(5 - 8i) - (2 + 9i)$ | 24. $(\frac{1}{2} - \frac{2}{3}i) - (\frac{2}{3} - \frac{1}{4}i)$ |
| 25. $(5 - 4i)(3 + 6i)$ | 26. $(2 + 5i)^2$ | 27. $(4 + 8i)(4 - 8i)$ |
| 28. $\frac{6}{2 + 3i}$ | 29. $\frac{3 + i}{-2 + i}$ | 30. $\frac{2 - i}{\sqrt{3} - i}$ |
| 31. $2(2 + i) + (1 - i)^2$ | 32. $\frac{1}{3 - 5i} - (6 - 2i)$ | |
| 33. $(1 - 5i)(2 + i) - i(3 - 4i)$ | | |

Find the absolute value of the complex number.

- | | | |
|---------------|--------------------|----------------------------|
| 34. $-4 + 3i$ | 35. $\sqrt{2} - i$ | 36. $\sqrt{3} + \sqrt{2}i$ |
|---------------|--------------------|----------------------------|

Write the complex number in standard form.

- | | | | |
|-----------|-----------|-----------|-----------|
| 37. i | 38. i^2 | 39. i^3 | 40. i^4 |
| 41. i^5 | 42. i^6 | 43. i^7 | 44. i^8 |

45. **Pattern Recognition** Using the information from Exercises 37–44, write a general statement about the standard form of i^n where n is a positive integer. Use this statement to write i^{231} in standard form.