

# Practice 68

For use with Section 9-2

**Simplify.**

- |                                 |                                  |                                  |                                  |
|---------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 1. $\sqrt{40}$                  | 2. $\sqrt{75}$                   | 3. $\sqrt{80}$                   | 4. $\sqrt{108}$                  |
| 5. $\sqrt{150}$                 | 6. $\sqrt{98}$                   | 7. $\sqrt{700}$                  | 8. $\sqrt{60}$                   |
| 9. $\sqrt{450}$                 | 10. $\sqrt{245}$                 | 11. $\sqrt{128}$                 | 12. $\sqrt{242}$                 |
| 13. $2\sqrt{27}$                | 14. $5\sqrt{32}$                 | 15. $3\sqrt{175}$                | 16. $4\sqrt{63}$                 |
| 17. $6\sqrt{125}$               | 18. $2\sqrt{54}$                 | 19. $7\sqrt{192}$                | 20. $10\sqrt{162}$               |
| 21. $(\sqrt{8})^2$              | 22. $\sqrt{10} \cdot \sqrt{10}$  | 23. $\sqrt{6} \cdot \sqrt{2}$    | 24. $\sqrt{13^2}$                |
| 25. $\sqrt{3} \cdot \sqrt{15}$  | 26. $\sqrt{6} \cdot \sqrt{14}$   | 27. $\sqrt{5} \cdot \sqrt{30}$   | 28. $\sqrt{21} \cdot \sqrt{35}$  |
| 29. $4\sqrt{8} \cdot 3\sqrt{2}$ | 30. $10\sqrt{6} \cdot 9\sqrt{6}$ | 31. $7\sqrt{15} \cdot 2\sqrt{5}$ | 32. $8\sqrt{7} \cdot 5\sqrt{14}$ |

**Solve for  $x$ .**

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|-----------------------------|-----------------------------|-------------------------|
| 33. $x^2 = 44$              | 34. $x^2 = 27$              | 35. $x^2 = 96$          |
| 36. $3x^2 = 150$            | 37. $5x^2 = 90$             | 38. $2x^2 = 360$        |
| 39. $3y^2 = x^2$            | 40. $x^2 = 6a^2 + 6a^2$     | 41. $x^2 = 10k^2 - k^2$ |
| 42. $(3b)^2 + (4b)^2 = x^2$ | 43. $x^2 = (4m)^2 - (2m)^2$ | 44. $x^2 + c^2 = 19c^2$ |
45. A square has a perimeter of  $12a$ . Write an expression for the length of the diagonal of the square, in terms of  $a$ , in simplified radical form.
46. A rectangle has length  $3b$  and width  $6b$ . Write an expression for the length of the diagonal of the rectangle, in terms of  $b$ , in simplified radical form.

Use triangle  $PQR$  for Exercises 47 and 48. This triangle is "half" of an equilateral triangle.

47. Write an expression, in terms of  $a$ , for the hypotenuse  $\overline{PQ}$  of triangle  $PQR$ .
48. Using the Pythagorean theorem, write an equation that relates  $x$  and  $a$ . Solve the equation for  $x$  in simplified radical form.

