

**Practice C**

For use with pages 9–14

**Write the expression in exponential form.**

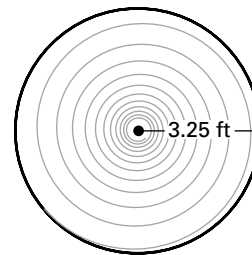
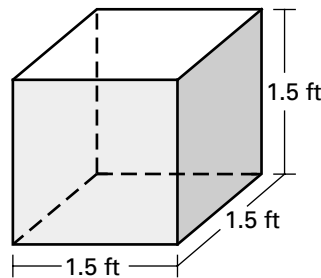
- |                                    |                                                                           |                                                                |
|------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------|
| 1. eight to the fourth power       | 2. eleven squared                                                         | 3. 10 to the $x$ th power                                      |
| 4. $7a$ cubed                      | 5. $1.5x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x$ | 6. $a \cdot a \cdot a \cdot a$                                 |
| 7. $5y \cdot 5y \cdot 5y \cdot 5y$ | 8. $3x \cdot 3x \cdot 3x \cdot 3x \cdot 3x$                               | 9. $4 \cdot 4 \cdot 4 \cdot 4 \cdot 4 \cdot b \cdot b \cdot b$ |

**Evaluate the power.**

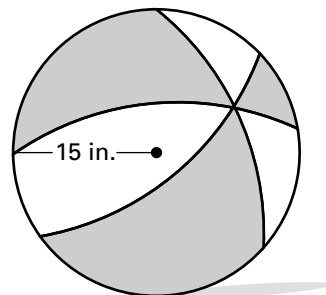
- |           |             |             |
|-----------|-------------|-------------|
| 10. $9^2$ | 11. $6^3$   | 12. $1.2^2$ |
| 13. $5^4$ | 14. $0.3^5$ | 15. $10^7$  |

**Evaluate the expression for the given value(s) of the variable(s).**

- |                                                                                                                                      |                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16. $3^x$ when $x = 7$                                                                                                               | 17. $a^4$ when $a = 10$                                                                                                                                                                      |
| 18. $y^3$ when $y = 4.2$                                                                                                             | 19. $7x^2$ when $x = 5$                                                                                                                                                                      |
| 20. $(x - y)^5$ when $x = 5$ and $y = 3$                                                                                             | 21. $(7x - 8)^2$ when $x = 1.3$                                                                                                                                                              |
| 22. $14x - y^2$ when $x = 1.5$ and $y = 3$                                                                                           | 23. $4a + b^3$ when $a = 3$ and $b = 2$                                                                                                                                                      |
| 24. $a^2 + b^3$ when $a = 2.3$ and $b = 3.2$                                                                                         | 25. $(3x - 6)^3$ when $x = 3$                                                                                                                                                                |
| 26. $4a^2 + 2b$ when $a = 2$ and $b = 3$                                                                                             | 27. $\left(\frac{1}{2}y\right)^2 - x^2$ when $x = 3$ and $y = 8$                                                                                                                             |
| 28. <b>Safe Storage</b> A safe has a cubical storage space inside. What is the volume of a safe with an interior length of 1.5 feet? | 29. <b>Area Rug</b> A circular area rug has a radius of 3.25 feet. How much area does the rug cover? (The area of a circle is $A = \pi r^2$ where $\pi \approx 3.14$ and $r$ is the radius.) |



30. **Beach Ball** When blown up, a beach ball has a radius of 15 inches. How much air, in cubic feet, is needed to blow up the beach ball? (The volume of a sphere is  $V = \frac{4}{3}\pi r^3$  where  $\pi \approx 3.14$  and  $r$  is the radius.)



31. **Cylindrical Can** A can has a radius of 1.3 inches and a height of 3.8 inches. What is the volume of the can? (The volume of a cylinder is  $V = \pi r^2 h$  where  $\pi \approx 3.14$ ,  $r$  is the radius, and  $h$  is the height.)

