

SKILL

Skills Readiness**8****Evaluate Powers**

The product of a repeated factor is called a power. To evaluate the power of a number, multiply the factor the correct number of times to arrive at the product.

Example: the 4th power of 3, or 3^4 :

$$\underbrace{3 \cdot 3}_{9} \cdot 3 \cdot 3 =$$

$$\underbrace{9 \cdot 3}_{27} \cdot 3 =$$

$$\underbrace{27 \cdot 3}_{81} = 81$$

Special powers:

- Any nonzero number raised to a power of one is the number itself: $5^1 = 5$.
- Any nonzero number raised to a power of zero is 1: $13^0 = 1$.

To add, subtract, multiply, or divide powers of numbers, evaluate each expression and then perform the indicated operation:

$$(-4)^3 + 6^2 = (-4 \cdot -4 \cdot -4) + (6 \cdot 6) = -64 + 36 = -28$$

Practice on Your Own

Find the value of each expression.

1. 2^5

2. 4^2

3. 113^0

4. 15 raised to the second power

5. -10 cubed

6. $5^0 + 8^0$

7. $(-2)^4 + 3^2$

8. $6^2 \cdot 2^2$

9. $8^2 \div 2^4$

Check

Find the value of each expression.

10. 4^3

11. $(-1)^8$

12. 9 squared

13. $10^2 - 20^0$

14. $(-2)^3 + 3^3$

15. $(-1)^3 \cdot 2^5$

16. $5^2 \cdot 10$

17. $10^3 \div 5^3$

18. $\frac{3^4}{6^0}$
