1-4 Exercises

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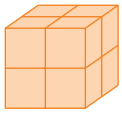
GUIDED PRACTICE

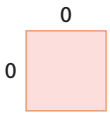
1. **Vocabulary** What does the *exponent* in the expression 5^6 tell you?

SEE EXAMPLE 1 p. 26

Write the power represented by each geometric model.

2. 

3. 

4. 

SEE EXAMPLE 2 p. 27

Simplify each expression.

5. 7^2
6. $(-2)^4$
7. $(-2)^5$
8. $-\left(\frac{1}{2}\right)^4$

SEE EXAMPLE 3 p. 27

Write each number as a power of the given base.

9. 81; base 9
10. 100,000; base 10
11. −64; base −4
12. 10; base 10
13. 81; base 3
14. 36; base −6

SEE EXAMPLE 4 p. 28

15. **Technology** Jan wants to predict the number of hits she will get on her Web page. Her Web page received 3 hits during the first week it was posted. If the number of hits triples every week, how many hits will the Web page receive during the 5th week?

PRACTICE AND PROBLEM SOLVING

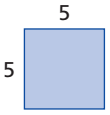
Independent Practice

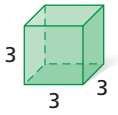
For Exercises	See Example
16–18	1
19–22	2
23–28	3
29	4

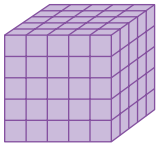
Extra Practice

Skills Practice p. S4
Application Practice p. S28

Write the power represented by each geometric model.

16. 

17. 

18. 

Simplify each expression.

19. 3^3
20. $(-4)^2$
21. -4^2
22. $\left(-\frac{3}{5}\right)^2$

Write each number as a power of the given base.

23. 49; base 7
24. 1000; base 10
25. −8; base −2
26. 1,000,000; base 10
27. 64; base 4
28. 343; base 7

29. **Biology** Protozoa are single-celled organisms. *Paramecium aurelia* is one type of protozoan. The number of *Paramecium aurelia* protozoa doubles every 1.25 days. There was one protozoan on a slide 5 days ago. How many protozoa are on the slide now?

30. **Write About It** A classmate says that any number raised to an even power is positive. Give examples to explain whether your classmate is correct.

Compare. Write <, >, or =.

31. $3^2 \_\_ 3^3$
32. $5^2 \_\_ 2^5$
33. $4^2 \_\_ 2^4$
34. $1^9 \_\_ 1^4$
35. $-2^3 \_\_ (-2)^3$
36. $-3^2 \_\_ (-3)^2$
37. $10^2 \_\_ 2^6$
38. $2^2 \_\_ 4^1$