

CHAPTER
4 **At-Home Practice**
Exponents

Write using exponents.

1. $(-4) \cdot (-4) \cdot (-4)$

2. $3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$

3. $9 \cdot 9$

4. $t \cdot t \cdot t$

Simplify.

5. 4^3

6. $(-3)^4$

7. 6^4

8. $(-1)^9$

9. $(2 + 4^3)$

10. $(27 - 3^2)$

11. $25 + (8 \cdot 4^3)$

12. $(12 - 7^2)$

Multiply.

13. $6^4 \cdot 6^3$

14. $5^3 \cdot 5^6$

15. $(2p^2)(3p^5)$

16. $(-5c^2d)(2cd^5)$

Divide.

17. $\frac{5^6}{5^4}$

18. $\frac{r^7}{r^6}$

19. $\frac{42x^5}{7x^2}$

20. $\frac{51a^5b^2}{3ab}$

Simplify.

21. 10^{-3}

22. 10^{-6}

23. 10^{-8}

24. 10^{-1}

25. 3^{-3}

26. $\frac{6^2}{6^5}$

27. $\frac{4^5}{4^3}$

28. $7^4 \cdot 7^{-5}$

Write each number in standard or scientific notation.

29. 9,630,000

30. 2.7×10^{-5}

31. 0.0015

Answers: 1. $(-4)^3$ 2. 3^6 3. 9^2 4. t^3 5. 64 6. 81 7. 1296 8. -1 9. 66 10. 18 11. 537 12. -37 13. 6^7 14. 5^9
15. $6p^7$ 16. $-10c^3d^6$ 17. 5^2 18. r 19. $6x^3$ 20. $17a^4b$ 21. 0.001 22. 0.000001 23. 0.00000001 24. 0.1 25. $\frac{27}{1}$
26. $\frac{216}{1}$ 27. 16 28. $\frac{7}{1}$ 29. 9.63×10^6 30. 0.000027 31. 1.5×10^{-3}

CHAPTER

4

Family Fun

Match It Up!

Directions
Using the numbers in the right-hand column, make the number sentences true in the left-hand column. You may use some numbers more than one time and some numbers not at all. See how well you can match up the correct answers to the number sentences.

Number Sentences	x equals _____	Possible Answers for x
1. $3^x = \frac{1}{9}$		0
2. $7.2 \times 10^x = 0.072$		10
3. $x^{12} = 1$		-5
4. $8^x \times 8^3 = 8^{-2}$		2
5. $x^4 = 10,000$		7
6. $\frac{7^8}{7^x} = 49$		3
7. $0.001 = 10^x$		-4
8. $5^x = 625$		1
9. $12 = 24 \cdot x^{-1}$		5
10. $6^x \cdot 6^{-3} = 36$		-3
11. $\frac{15^3}{15^x} = 1$		-2
12. $\frac{1}{10,000} = 10^x$		6
		4
		-1
		-10

Answer: 1. -2 2. -2 3. 1 4. -5 5. 10 6. 6 7. -3 8. 4 9. 2 10. 5 11. 3 12. -4