

NAME _____

DATE _____

Module 1 Getting Ready for Algebra
Lesson 4 Simplifying Expressions with
 Exponents and Roots



**independent
practice**

Simplify.

1. 8^3

2. 3^4

3. 3^0

4. $\left(\frac{3}{7}\right)^2$

5. $\left(\frac{2}{3}\right)^4$

6. 21^1

7. 11^2

8. 0^6

9. $(-2)^3$

10. $\left(-\frac{3}{4}\right)^3$

11. $(-2)^7$

12. $(-1)^0$

13. $(-6)^2$

14. $\left(-\frac{1}{6}\right)^3$

15. $\sqrt{81}$

16. $\sqrt{\frac{4}{9}}$

17. $\sqrt[3]{729}$

18. $\sqrt[3]{\frac{1}{8}}$

19. $\sqrt[3]{-125}$

20. $\sqrt{900}$

Journal

1. A student wrote the rule: $1^n = 1$, where n is any natural number. Is the student correct? Can you think of any changes that might be made to her rule? Explain.
2. Students often forget the “code” for simplifying exponential expressions and say that $b^n = b \cdot n$. Is there ever a case in which $b^n = b \cdot n$? Explain.
3. In this lesson, you learned the rule $b^0 = 1$. Write a rule for b^1 . Write a rule for 0^n . Explain each rule.
4. How can you determine whether a cube root is negative or positive? Explain.
5. In the expression $(-2)^4$, why are parentheses included? What is the value of -2^4 ?

Cumulative Review

Complete the table by placing a check mark in each column that applies to the given number.

	Real Number	Rational Number	Integer	Whole Number	Natural Number
1. -3					
2. 0					
3. 5.6					
4. 5					
5. $\frac{2}{5}$					

Simplify.

6. $(-3)(-5) =$ _____
7. $-4 - (-4) =$ _____
8. $13 + (-8) =$ _____
9. $\left(\frac{2}{5}\right) - \left(-\frac{1}{2}\right) =$ _____
10. $\frac{1}{8} \cdot \frac{2}{3} =$ _____