

Lesson 1-7: More Properties of Integer Exponents

1. Sample answer: The Zero Exponent Property states that any nonzero number with an exponent of 0 is equal to 1. The Negative Exponent Property states that a value raised to a negative power is equal to the multiplicative reciprocal of the value.
2. Sample answer: It means how many times to divide the number 1 by the base number. In this case, divide the number 1 by the base number, 9, twelve times.
3. Sample answer: First, simplify what is inside the grouping symbols, $2^0 = 1$. Then simplify $3(1) = 3$.
4. 1
5. a. $1/7^6$
b. 10^3
6. 3
7. 64; 16; 4; 1
8. -8; 4; -2; 1
9. a. 1
b. Sample answer: 5^0 and (-4^0) are equivalent to $(-3.2)^0$ because any nonzero number raised to the power of 0 is equal to 1.
10. a. $\frac{1}{108}$
b. $\frac{7}{18}$
11. <
12. =
13. $1/9^4$
14. 2^6
15. a. No; Sample answer: For any number y , $y^0 = 1$. Any nonzero number raised to the zero power is equal to 1. Since $9(1) = 9$, the value of the expression will always be 9.
16. a. $-\frac{5}{256}$
b. $\frac{7}{64}$
17. a. $\frac{1}{6,561}$, $\frac{1}{6,561}$
b. $-\frac{1}{19,683}$; $-\frac{1}{19,683}$
18. Yes; Sample answer: $(\frac{1}{2})^{-4}$ is the same as $1/(\frac{1}{2})^4$ or 2^4 , which is greater than 1.
19. $1/x^4$
20. a. Less than 1
b. Sample answer: Change -3 to 3 to get $(4^3)^2$
21. B, D, E
22. B, E