

Section 2.4: Exponent Laws Part 1

- ↳ Exponent Rules:
- 1) Product of Powers
 - 2) Quotient of Powers

Product of Powers

Write as a single power

Example 1: $3^4 \times 3^2$

Example 2: $(-2)^3 \times (-2)^2$

Rule: $a^m \times a^n = a^{m+n}$

a is an integer (except 0)
 m and n are whole numbers

Examples: Use the law of exponents to simplify.

3. $3^4 \times 3^2 \times 3^3$

4. $7^5 \times 7^2 \times 7$

5. $(-2)^3 - (-2)^2 \times (-2)$

6. $4^2 - 3^0 + 2^3(2)^2$

Quotient of Powers

Example 7: $\frac{3^6}{3^2}$ or $3^6 \div 3^2$

Write as a single power

Example 8: $\frac{(-2)^4}{(-2)^3}$

Rule: $\frac{a^m}{a^n} = a^{m-n}$ $m \geq n$

Example: Write as a single power.

9. $\frac{3^6 \times 3^3}{3^4}$

10. $10^7 \times 10^4 \div 10^9$

11. $\frac{(-4)^3 \times (-4)^2}{(-4)^4}$

Example: Write as a single power where possible and evaluate.

12. $5^3 \times 5^2 - 5^2 \times 5$

13. $-3^4(3^6 \div 3^3) + 3^2$

14. $-2^3 - 2^6 \div 2^4$

15. $(-3)^6 \div (-3)^5 - (-3)^2 \times (-3)$

Work Sample Questionsp. 76-78: # 4aceg, 5aceg, 8ac, 9, 10afj, 13adg, 15,
17, 18**Extra Practice Questions**

p. 76-78: # 4bdfh, 5bdfh, 8bd, 10bcdegh, 13bcef