

Warm-Up Notes

MAT 100: ELEMENTARY ALGEBRA

Fall 2026

SECTION 6.2 USE MULTIPLICATION PROPERTIES OF EXPONENTS

Install — 10 minute lesson

Objectives of this Section

- Simplify expressions with exponents
- Simplify expressions using the Product Property for Exponents
- Simplify expressions using the Power Property for Exponents
- Simplify expressions using the Product to a Power Property
- Simplify expressions by applying several properties
- Multiply monomials

Skills**Introduced in this section:**

- **EXP.MM** — Multiplying monomials

Also practiced: WRD.NM (Naming the model).

Lesson

An exponent is just a shortcut for counting how many times a number multiplies itself. Once you can count factors, you don't have to memorize a separate rule for every situation — multiplying two powers, raising a power to a power, multiplying monomials together — you can figure out what happens by counting. Today you'll see how far that one idea carries you.

I do

Watch. Compute the values of the exponent expressions below.

1. (a) 2^6
2. (b) 14^1
3. (c) $\left(\frac{2}{5}\right)^3$
4. (d) $(0.7)^2$

We do

Together. Using the Power Property for Exponents, simplify $(x^2)^y$.

You do

Your turn. Compute the product: $(4/7rs^2)(14rs^3)$.

Your turn. Compute the values of the exponent expressions below.

1. (a) 10^4
2. (b) 17^1
3. (c) $\left(\frac{2}{9}\right)^2$
4. (d) $(0.5)^3$

Practice

1. Simplify the following expressions using exponent rules. Provide the simplified results.

(a) $(2r^2)^3(4r)^2$ (b) $(3x^3)^3(x^5)^4$

2. Simplify the following expression by applying exponent rules: $\left(\frac{2}{3}x^2y\right)^3$

3. Compute the values of the exponent expressions below.

1. (a) $(-2)^6$

2. (b) -2^6

4. Simplify the following expressions using exponent rules. Provide the simplified results.

(a) $\left(\frac{2}{5}x^2y\right)^3$ (b) $\left(\frac{8}{9}xy^4\right)^2$