

Warm-Up Notes

MAT 100: ELEMENTARY ALGEBRA

Fall 2026

SECTION 6.5 DIVIDE MONOMIALS

Install — 10 minute lesson

Objectives of this Section

- Simplify expressions using the Quotient Property for Exponents
- Simplify expressions with zero exponents
- Simplify expressions using the quotient to a Power Property
- Simplify expressions by applying several properties
- Divide monomials

Skills**Introduced in this section:**

- **EXP.DM** — Dividing Monomials
- **EXP.NZ** — Negative and Zero Exponents

Also practiced: EXP.CL (Combining Like Terms), WRD.NM (Naming the model).

Lesson

Dividing powers with the same base means canceling out matching factors, so instead of writing everything out you just subtract exponents. Whichever side, top or bottom, has more factors left over is where the answer ends up. And if both sides have exactly the same amount, everything cancels and you're left with 1.

I do

Watch. Evaluate the following expressions using the zero-exponent rule.

1. (a) $7y^0 (17y)^0$
2. (b) $(-93c^7d^{15})^0$

We do

Together. Compute the simplified form of the following expression using exponent rules:

$$\frac{m^{12}}{(m^8)^3}$$

You do

Your turn. Simplify the following expressions using the quotient property for exponents. For each, apply $a^m/a^n = a^{m-n}$.

1. (a) $\frac{p^{21}}{p^7}$
2. (b) $\frac{4^{16}}{4^4}$

Your turn. Compute the simplified form of the following expression using exponent rules:

$$\frac{n^8}{(n^6)^4}$$

Practice

1. Evaluate the expression $\frac{56y^4z^5}{7y^3z^3} - \frac{45y^2z^2}{5y}$.

2. Evaluate the expression $\frac{z^6}{z^5}$.

3. Evaluate the expression $p^4 \cdot p^6$.

4. Compute the quotient of the monomials: $\frac{56b^8}{7b^2}$.