

Math 3 Guided Notes Unit 2 Day 1 - Exponent Rules

• $a^m \cdot a^n = a^{m+n}$ $x^2 \cdot x^3 =$

• $\frac{a^m}{a^n} = a^{m-n}$ $\frac{x^7}{x^5} =$

• $a^{-n} = \frac{1}{a^n}$ $x^{-3} =$

• $(a^m)^n = a^{mn}$ $(x^4)^2 =$

• $(ab)^m = a^m b^m$ $(x^2 y^5)^3 =$

• $a^0 = 1$ $x^0 =$

• $\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$ $\left(\frac{x}{y}\right)^3 =$

Let's Try A Few Together:

Simplify. Assume that no denominator is equal to zero.

1. $\frac{7^8}{7^2}$

2. $\frac{x^8 y^{12}}{x^2 y^7}$

3. $\frac{5pq^7}{10p^6q^3}$

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

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

6. $\left(\frac{3mn^3}{6n^2}\right)^2$

7. $y^0(y^5)(y^{-9})$

8. $\frac{(4m^{-3}n^5)^0}{mn}$

9. $\frac{(3x^2y^5)^0}{(21x^5y^2)^0}$

10. 13^{-2}

11. $\frac{c^{-5}}{d^3g^{-8}}$

12. $\frac{(cd^{-2})^3}{(c^4d^9)^{-2}}$

Rational Exponents

$$x^{\frac{p}{r}} = \sqrt[r]{x^p}$$

Write each exponent in radical form.

$$a^{\frac{6}{5}}$$

$$(10n)^{\frac{3}{2}}$$

$$6(v)^{1.5}$$

Write each radical in exponential form.

$$\sqrt[4]{v}$$

$$\sqrt{6p}$$

$$(\sqrt[3]{3a})^4$$

$$\frac{1}{(\sqrt{3k})^5}$$

Simplify:

$$(9r^4)^{0.5}$$

$$(n^4)^{\frac{3}{2}}$$

$$(27p^6)^{\frac{5}{3}}$$

$$(216r^9)^{\frac{1}{3}}$$