

SC Algebra 1
8.2 Division Properties of Exponents

Warm Up

Which value of n makes each statement true?

1. $8x^n(6x^5) = 48x^8$

2. $(x^n)^2 = x^{12}$

3. $(6x^2y^3)^3 = nx^6y^9$

Power Rules Quick Review:

Quotient Rule:

"To _____ or _____ are opposites, that's a fact! So, if to multiply you _____ the exponents, then to _____ you must _____."

Example 1:

Simplify each expression. Assume the denominator does not equal zero.

$$\frac{(2^8)}{2^5}$$

$$\frac{r^5}{r^4}$$

$$\frac{b^5c^7}{b^2c}$$

$$\frac{x^3y^7z}{xy^5}$$

$$\frac{a^2b^9cd^4}{b^8cd}$$

$$\frac{q^5rst^7}{q^3rt^4}$$

How can I meet today's standards?

*I can apply the division properties of exponents when **dividing monomials** and when raising a **quotient to a power**.*

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8.2 Division Properties of Exponents

Power of a Quotient Rule:

"Kind of like an _____ tower, the _____ and _____ must be raised to the same _____."

Example 2:

Simplify each expression.

$$\left(\frac{2}{5}\right)^3$$

$$\left(\frac{p}{q}\right)^2$$

$$\left(\frac{5a^2}{6}\right)^3$$

$$\left(\frac{3xz^4}{2y^3}\right)^2$$

$$\left(\frac{x^4y}{xyz}\right)^2$$

$$\left(\frac{5j^3l^2}{7k^5}\right)^4$$