

Name

7.2 Apply Exponent Properties Involving Quotients

Alg I

I can use properties of exponents involving quotients

Quotient of Powers Property:

* To divide powers with the same base, subtract exponents

Ch. 7 Quiz

$$\frac{a^m}{a^n} = a^{m-n} \quad \frac{4^7}{4^2} = 4^{7-2} = \boxed{4^5}$$

$$\frac{a^5}{a^3} = \frac{\cancel{a} \cdot \cancel{a} \cdot \cancel{a} \cdot a \cdot a}{\cancel{a} \cdot \cancel{a} \cdot \cancel{a}} = a \cdot a = a^2 = a^{5-3}$$

Example 1:

1) $\frac{6^{11}}{6^5} = 6^{11-5} = \boxed{6^6}$ 2) $\frac{(-4)^9}{(-4)^2} = (-4)^{9-2} = \boxed{(-4)^7}$

3) $\frac{q^4 \cdot q^3}{q^2} = \frac{q^{4+3}}{q^2} = \frac{q^7}{q^2} = q^{7-2} = \boxed{q^5}$

4) $\frac{1}{y^5} \cdot y^8 = \frac{y^8}{y^5} = y^{8-5} = \boxed{y^3}$

Name

Apply Exponent Properties

Alg I

Involving Quotients

I can use properties of exponents involving quotients.

Power of a Quotient Property:

* To find a power of a quotient, find the power of the numerator and denominator and divide

Ch. 7 Quiz

$$\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m} \quad \left(\frac{3}{2}\right)^7 = \frac{3^7}{2^7}$$

$$\left(\frac{a}{b}\right)^4 = \frac{a \cdot a \cdot a \cdot a}{b \cdot b \cdot b \cdot b} = \frac{a^4}{b^4}$$

* Complete

Skills Practice, Example 2:

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$$5) \left(\frac{a}{b}\right)^2 = \frac{a^2}{b^2}$$

$$7) \left(\frac{x^2}{4y}\right)^2 = \frac{x^{2 \cdot 2}}{4^2 y^2} = \frac{x^4}{16y^2}$$

$$6) \left(-\frac{5}{y}\right)^3 = -\frac{5^3}{y^3} = -\frac{125}{y^3}$$

Example 3:

$$8) \left(\frac{2s}{3t}\right)^3 \cdot \left(\frac{t^5}{16}\right) = \frac{2^3 s^3}{3^3 t^3} \cdot \frac{t^5}{16} = \frac{8s^3 t^5}{27t^3 \cdot 16} = \frac{8s^3 t^{5-3}}{432} = \frac{8s^3 t^2}{54}$$

$$2^3 = 2 \cdot 2 \cdot 2 = 8$$

$$3^3 = 3 \cdot 3 \cdot 3 = 27$$

$$16 \cdot 27 =$$