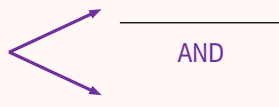


TOPIC: POWER OF A QUOTIENT RULE

Power of a Quotient Rule

◆ Use the **Power of a Quotient Rule** (a.k.a. the quotient to a power rule) to distribute an exponent to a fraction.

| Name | Example | Rule | Description |
|---------------------|--|--|--|
| Power of a Product | $(3 \cdot 4)^2 = 3 \cdot 4 \times 3 \cdot 4 = 3^2 \cdot 4^2$ | $(a \cdot b)^m = a^m \cdot b^m$ | Distribute exponent to each factor in parentheses |
| Power of a Quotient | $\left(\frac{3}{4}\right)^2 =$ | $\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$ | Distribute exponent to  AND |

EXAMPLE

Use the power of a quotient rule to evaluate or simplify each exponential expression.

(A) $\left(\frac{p}{2}\right)^4$

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

PRACTICE

Simplify.

(A) $\left(\frac{x}{4y}\right)^3$

(B) $\left(\frac{y^4}{5}\right)^3$

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