

Quotient Rule

Example 1 Simplify in exponential notation $\frac{4^5}{4^3}$

$$\frac{4^5}{4^3} = \frac{\cancel{4} \times \cancel{4} \times \cancel{4} \times 4 \times 4}{\cancel{4} \times \cancel{4} \times \cancel{4}}, \text{ dividing out the 4's, we have } 4 \times 4 \text{ or } 4^2$$

Example 2 Simplify in exponential notation $\frac{7^6}{7^5}$

$$\frac{7^6}{7^5} = \frac{\cancel{7} \times \cancel{7} \times \cancel{7} \times \cancel{7} \times \cancel{7} \times 7}{\cancel{7} \times \cancel{7} \times \cancel{7} \times \cancel{7} \times \cancel{7}}, \text{ dividing out the 7's, we have } 7 \text{ or } 7^1$$

When you divide exponentials with the SAME base, you subtract the exponents.

$$A^m \div A^n = A^{m-n}$$