Algebra I
Lesson 7.4 Division Properties of Exponents
Mrs. Snow, Instructor

If we can multiply exponential numbers, we can also divide exponential numbers.

Here is a basic rule for division:

Rule:	Example:
$\dfrac{a^m}{a^n} = a^{m-n}$	$\dfrac{x^9}{x^5} = \dfrac{\cancel{xxxxxxxxx}}{\cancel{xxxxx}} x^{9-5} = x^4$
$\left(\dfrac{a}{b}\right)^n = \dfrac{a^n}{b^n}$	$\left(\dfrac{x}{y}\right)^5 = \dfrac{x^5}{y^5}$

Simplify:

$\dfrac{2^9}{2^7}$ $\qquad\qquad$ $\dfrac{y}{y^4}$ $\qquad\qquad$ $\dfrac{6.4 \times 10^7}{8 \times 10^3}$ $\qquad\qquad$ $\left(\dfrac{2^3}{3^2}\right)^2$

$\left(\dfrac{ab^4}{c^2d^3}\right)^5$ $\qquad\qquad$ $\dfrac{m^5n^4}{(m^5)^2n}$ $\qquad\qquad$ $\left(\dfrac{a^3b}{a^2b^2}\right)^3$ $\qquad\qquad$ $\dfrac{3^5 \cdot 2^4 \cdot 4^3}{3^4 \cdot 2^3 \cdot 4^6}$

$\left(\dfrac{4}{3^2}\right)^{-3}$ $\qquad\qquad$ $\left(\dfrac{2a}{b^2c^3}\right)^{-4}$ $\qquad\qquad$ $\left(\dfrac{s}{3}\right)^{-2}\left(\dfrac{9s^2}{t}\right)^{-1}$ $\qquad\qquad$ $\left(\left(\dfrac{s}{3}\right)^{-2}\left(\dfrac{9s^2}{t}\right)^{-1}\right)^0$