

Name _____ Class _____ Date _____

Exponent Practice

Using the Laws of Exponents, simplify the following expressions.

$\left(\frac{3}{x}\right)^3$	$(a^3b^4)^5$	$(-2x^3)^2$	$x^4 \cdot 4x^2 \cdot 2x$
$(-x^2)(2x^4)^3$	$5a^4 \cdot a^{-3}$	$2x^2 \cdot 3y^3 \cdot x^4$	$6x^4 \cdot 2xy \cdot 3y^3$
$(-x^4)(-x)^2(-x)$	$\frac{x^5}{x^3}$	$\frac{a^5b^7}{a^4}$	$\frac{12x^4y^4}{3x^2y}$
$\left(\frac{4a^5}{2a^3}\right)^{-3}$	$(3x^2y)^{-2}(6x^4y^5)$	$\frac{(2a^3b^2)^3}{(2a^2b)^2}$	$\left(\frac{8x^4y^2}{10x^8y^4}\right)^{-2}$

Exponent Challenge

$$\frac{6x^4 \cdot 2xy \cdot 3y^5}{2x^3 \cdot 3y^3 \cdot x^2}$$

$$\frac{64a^5b^2c}{16a^3b^5c}$$

$$\left(\frac{36a^8b^3c}{9a^6b^3c^2}\right)^{-2}$$

$$\frac{(-4x^4y^3z^3)^3}{(2x^2yz^3)^5}$$

$$\frac{81x^{12}y^{-4}z^8}{(3x^4y^3z^2)^3}$$

$$\left(\frac{-3x^5y^3}{x^4y^2}\right)^3 \cdot \left(\frac{x^6y^2}{9x^4y}\right)^2$$

$$\left(\frac{36x^9y^8z^5}{3x^7y^3}\right)^2 \cdot \left(\frac{3x^5y^2}{x^6y^5z^2}\right)^{-3}$$

$$\left(\frac{81x^{-5}y^6z^4}{27x^{-5}y^4z^3}\right)^3 \cdot \left(\frac{6x^{11}y^5z^4}{24x^8y^3z^4}\right)^{-2} \cdot (12y^4z)^{-2}$$