

## Bellwork

03/02/2012

Simplify, if possible.

1.  $(r^3 s^7 t^5)^3 (s^2 t)^5$

$$\begin{array}{ccccccc} r^9 & s^{21} & t^{15} & s^{10} & t^5 \\ \cdot & \cdot & \cdot & \cdot & \cdot \\ \hline r^9 & s^{31} & t^{20} & & \end{array}$$

2.  $(\frac{1}{2}x)^3$

$$\begin{array}{c} (\frac{1}{2})^3 x^3 \\ \frac{1}{8} x^3 \end{array}$$

## Lesson 9.2

### Zero and Negative Properties

What You Need to Know:

**Zero Power Property:**  $a^0 = 1$ ,  $a \neq 0$

**\*\*Anything to the zero power is equal to <sup>one</sup>~~zero~~.\*\***

**Negative Power Property:**  $a^{-n} = \frac{1}{a^n}$ ,  $a \neq 0$

**\*\*To get rid of a negative exponent, move it to the opposite pole (north or south).\*\***

## Zero &amp; Negative Properties

Write the expression without negative or zero exponents.

$$\frac{3^{-4}}{1} = \frac{1}{3^4} = \frac{1}{81}$$

$$\frac{4^{-y}}{1} = \frac{1}{4^y}$$

$$\frac{0^{-1}}{1} = \frac{1}{0^1} = \frac{1}{0} \quad \text{Undefined}$$

$\emptyset$

$$\frac{1}{6^{-1}} = \frac{6^1}{1} = 6^1 = 6$$

$$\left(\frac{3}{5}\right)^{-1}$$

$$\frac{3^{-1}}{5^{-1}} = \frac{5^1}{3^1} = \frac{5}{3}$$

$$(-5.2)^0 = 1$$

$$-5.2^0$$

$$-1 \cdot 5.2^0$$

$$-1 \cdot 1$$

$$-1$$

## Zero & Negative Properties

Use the zero and negative properties to simplify the expression.

$$(7)^0 x^2$$

$$5g^{-3} * h^{-4}$$

$$4(3^{-k})$$

$$(4y)^{-3}$$

$$\frac{1}{g^{-2n}}$$

## Homework Assignment

Worksheet  
"Zero & Negative Properties of  
Exponents"

$$3. \left( \frac{b^{10}}{b^3} \right)^{-2}$$

$$\frac{b^{-20}}{b^{-6}}$$

$$\frac{b^6}{b^{20}}$$

$$b^{6-20}$$

$$\frac{b^{-14}}{1}$$

$$\frac{1}{b^{14}}$$

$$\left( \frac{7x^{-2}y}{x^8y^{-5}} \right)^3$$

$$\frac{7^3x^{-6}y^3}{x^{24}y^{-15}}$$

$$\frac{7^3y^3 \cdot y^{15}}{x^{24} \cdot x^6}$$

$$\frac{7^3y^{18}}{x^{30}} \rightarrow \frac{343y^{18}}{x^{30}}$$

$$\frac{(2a^2b)^3}{(2ab^3)^2} = \frac{2^3a^6b^3}{2^2a^2b^6}$$

$$2^{3-2}a^{6-2}b^{3-6}$$

$$2^1a^4b^{-3}$$

$$\frac{2a^4}{b^3}$$