

Warm Up-

Simplify the following: (leave in Scientific Notation if applicable)

1.  $-4^0 = -1$

$$(-4)^0 = 1$$

2.  $\frac{-8p^{-2}}{q^{-7}r^3} = \frac{-8q^7}{p^2r^3}$

3.  $6(.03 \times 10^{-5})$

$$.18 \times 10^{-5}$$

$$1.8 \times 10^{-6}$$

4.  $7(3 \times 10^{-3})$

$$21 \times 10^{-3}$$

$$2.1 \times 10^{-2}$$



## 8.4 More Multiplicative Properties of Exponents

## Simplifying a Power Raised to a Power

$$1. (x^3)^6 = x^{18} \quad (x^4)(x^6) = x^{10}$$

$$2. (a^{-4})^3 = a^{-12} = \frac{1}{a^{12}}$$

## Simplifying an Expression with Powers

1.  $c^5(c^3)^{-2}$   
 $c^5 c^{-6} = c^{-1} = \frac{1}{c}$

2.  $(a^4)^2 \cdot (a^2)^5$   
 $a^8 \cdot a^{10} = a^{18}$

## Simplifying a Product Raised to a Power

$$1. (2x^4)^2 = (2^2)(x^4)^2$$
$$4x^8$$

$$2. (4g^5)^{-2} = \frac{1}{(4g^5)^2}$$
$$\frac{1}{4^2g^{10}} = \frac{1}{16g^{10}}$$

$$3. (2a^3)^5(3ab^2)^3 =$$

$$(2^5a^{15})(3^3a^3b^6)$$

$$32a^{15} \cdot 27a^3b^6$$

$$864a^{18}b^6$$

## Simplifying a Product Raised to a Power Scientific Notation

$$1. (2 \times 10^3)^4 =$$

$$2^4 \times 10^{12} = 16 \times 10^{12} = 1.6 \times 10^{13}$$

$$2. 10^{-3} (3 \times 10^8)^2 =$$

$$10^{-3} \cdot 3^2 \times 10^{16}$$
$$9 \times 10^{13}$$

Homework:  
Worksheet #1-35

