

## 4-1 Exponent Rules Review

## Like-terms review

Group the like terms and then

$x^3$

$x$

combine

$-x^2$

$-5x$

$2x^3$

$x^2$

$-6x^3$

$3x$

$7x^2$

## EXPONENT RULES

*Graphic Organizer*

Name	Rule	Examples
<b>ADDING &amp; SUBTRACTING MONOMIALS</b>	<b>COMBINE LIKE TERMS!!!</b> (DO NOT CHANGE common variables and exponents!)	1. $9x^2y - 10x^2y =$ 2. Subtract $6w$ from $8w$ .
<b>PRODUCT RULE</b>	$x^a \cdot x^b =$	1. $h^2 \cdot h^6 =$ 2. $(-2a^2b) \cdot (7a^3b) =$
<b>POWER RULE</b>	$(x^a)^b =$	1. $(x^2)^3 =$ 2. $(-2m^5)^2 \cdot m^3 =$
<b>QUOTIENT RULE</b>	$\frac{x^a}{x^b} =$	1. $\frac{27x^5}{42x} =$ 2. $\frac{(y^2)^2}{y^4} =$
<b>NEGATIVE EXPONENT RULE</b>	$x^{-a} =$	1. $-5x^{-2} =$ 2. $\frac{4k^2}{8k^5} =$
<b>ZERO EXPONENT RULE</b>	$x^0 =$	1. $7x^0 =$ 2. $\frac{(w^4)^2}{w^8} =$

**ADDING &  
SUBTRACTING  
MONOMIALS**

**COMBINE LIKE TERMS!!!**

(DO NOT CHANGE common  
variables and exponents!)

**1.**  $9x^2y - 10x^2y =$

**2.** Subtract  $6w$  from  $8w$ .

## PRODUCT RULE

$$x^a \cdot x^b =$$

**1.**  $h^2 \cdot h^6 =$

**2.**  $(-2a^2b) \cdot (7a^3b) =$

## POWER RULE

$$(x^a)^b =$$

**1.**  $(x^2)^3 =$

**2.**  $(-2m^5)^2 \cdot m^3 =$

## QUOTIENT RULE

$$\frac{x^a}{x^b} =$$

1.  $\frac{27x^5}{42x} =$

2.  $\frac{(y^2)^2}{y^4} =$

## NEGATIVE EXPONENT RULE

$$x^{-a} =$$

**1.**  $-5x^{-2} =$

**2.**  $\frac{4k^2}{8k^5} =$



## ZERO EXPONENT RULE

$$x^0 =$$

**1.**  $7x^0 =$

**2.**  $\frac{(w^4)^2}{w^8} =$

## More Practice!

$$\frac{9p^{-2}q^5}{15p^2q^3}$$

$$4x^2y \cdot -3x^{-5}y^2$$

$$\left(\frac{-9c^3d}{c^2d^2}\right)^2$$

Simplify each of the following:

$$x \cdot x \cdot x \cdot x \cdot x =$$

$$x^4 \cdot x^9 =$$

$$(ab)^{14} =$$

$$\left(\frac{a}{2}\right)^4 =$$

$$\frac{k^{12}}{k^5} =$$

$$\left(\frac{1}{4}\right)^0 =$$