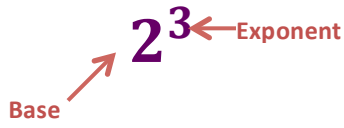


Objective 1: Review the Properties of Exponents

To Know	Practice Examples Simplify each of the following:	
Important Terminology: 	A.) 2^3	B.) -2^2
The Product Rule	C.) $2^3 * 2^7$	D.) $y^2 * y$
The Quotient Rule	E.) $\frac{2^7}{2^3}$	F.) $\frac{y^8}{y}$
Power Rule	G.) $(2^3)^2$	H.) $(y^3)^5$
Negative Exponent	I.) 2^{-1}	J.) y^{-2}
One Final Rule:	$x^0 = 1$	
	Any base that is raised to the power of zero equals 1!	

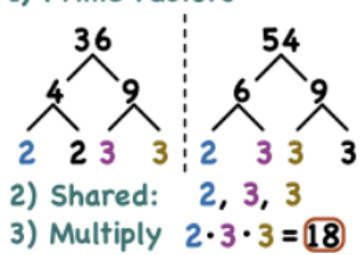
Tying it All Together. Simplify each of the following:

1) $(2x^3)(4x^2)$	2) $(2x^3y^{-2})(4x^2y^3)$	3) $\frac{2x^7y^9}{4x^3y}$
4) $(7x^3y^4)^2$	5) $\frac{21a^2}{3a^2b^{-2}}$	6) $(3x^3)(3x^4)(-3x^2)$
7) $\frac{22y^6z^8}{2yz^{-7}}$	8) $\left(\frac{-4x^{-2}y^5z^2}{8y^4z^{-2}}\right)^{-1}$	9) $-x^2 * 2x^7 * 3x^{-5}$

Objective 2: Review Scientific Notation

<p>The parts of scientific notation:</p> 2.37×10^9 <p>↑ ↑ ← Exponent Coefficient Base</p>	Key Points:
<p>Example 1: Write in scientific notation: 345,281</p>	<p>Example 2: Write in scientific notation: 0.0000087</p>

Objective III: Factoring a GCF from an expression

To Know	Examples/Explanation	
<p>What is the GCF?</p> <p><u>Greatest Common Factor</u> 1) Prime Factors</p>  <p>2) Shared: 2, 3, 3 3) Multiply $2 \cdot 3 \cdot 3 = 18$</p>	<ul style="list-style-type: none"> • GCF stands for • We find the GCF by... 	
<p>Example 1:</p> <p>Factor the polynomial $x^2 + x^5$</p>	<p>Step 1: Identify the common factors</p>	<p>Step 2: Factor</p>
<p>Example 2:</p> <p>Factor the polynomial $12x^4 + 9xy^3$</p>	<p>Step 1: Identify the common factors</p>	<p>Step 2: Factor</p>
<p>Example 3:</p> <p>Factor the polynomial $6y^3 + 3y^2 - 9y^4$</p>	<p>Step 1: Identify the common factors</p>	<p>Step 2: Factor</p>

Factoring out common binomials		
Example 4: Factor out the common binomials: $2x(x + 1) + 3(x + 1)$	Example 5: Factor out the common binomials: $7x(x - 1) - 3(x - 1)$	Example 6: Factor each expression: $4(3y - 8) + 2y(3y - 8)$

A Fun Case: Factoring by Grouping	
Guiding Example	The Steps
Factor $12x^3 - 9x^2 - 8x + 6$	(1) Group the terms into binomials <ul style="list-style-type: none"> • Identify common factors within terms & pair these terms together • Place parenthesis around each pair
	(2) Factor the GCF from each pair
	(3) Factor out the common binomial pair

ⁱⁱ *How Do You Find the Greatest Common Factor of Two Numbers Using Prime Factorization?* Digital image. *Virtual Nerd*. N.p., n.d. Web. <<http://virtualnerd.com/pre-algebra/factors-fractions-exponents/prime-factorization-greatest-common-factor/greatest-common-factor/greatest-common-factor-two-numbers>>.