Name: _____ Date: _____ Period: _____

EXPONENT RULES REVIEW

BASIC OF EXPONENTS		
Exponent Version	Expanded Version	Simplified Version
2^6		

PRODUCT RULE			
Example	Expanded	Simplified	Rule
$x^4 \cdot x^3$			
a) $8^1 \cdot 8^4$	b) $c^{12} \cdot c^{-4} \cdot c^6$	c) $(3x^2y^3)(-6y^4)$	d) $(ab^4c^3)(a^4b)$
e) $(10g^4h^7v^5)(11gh^8)$	f) $(4f^9h^3)(-5f^6)(-3h^2)$	g) $(-2^2x^3y^4)((-3)^2x^4y^4)$	h) $(3x^ay^bz^c)(-y^fz^g)$

POWER RULE			
Example	Expanded	Simplified	Rule
$(x^4)^3$			
a) $(a^4)^5$	b) $(2x)^2$	c) $(2^3x)^2$	d) $(10^2)^3$
e) $(-3^2x^6)^5$	f) $(7j^2)^3$	g) $2(3a^2)^3$	h) $(xy)^2(x^2y^2)^2$

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QUOTIENT RULE			
Example	Expanded	Simplified	Rule
$\frac{x^5}{x^2}$			
a) $\frac{b^8}{b^2}$	b) $\frac{8m^3n^2}{4mn^3}$	c) $\frac{7^{11}}{7^8}$	d) $\frac{7b^5}{b^4}$
e) $\frac{12g^8h^4}{g^3h^5}$	f) $\frac{4p^{11}}{8p^6}$	g) $\frac{2x^3y^8}{4y^2}$	h) $\frac{3x^{14}y^{11}}{18x^2}$

NEGATIVE/ZERO EXPONENTS			
Example	Example	Example	Example
x^{-4}	$\frac{1}{x^{-4}}$	x^0	3^0
a) $6c^3d^{-2}$		b) $6x^4x^{-10}$	
c) $\frac{x^{-2}y}{x^4y^{-1}}$		d) $\left(\frac{a^2b}{a^{-3}b^2}\right)^{-1}$	
e) $\left(\frac{5x^{13}y^5z^2}{3\cdot5^2}\right)^0$		f) $\left(\frac{x^{-8}}{y^{11}}\right)^{-2}$	

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