ALGEBRA 1 - CHAPTER 7 NOTES
RULES OF EXPONENTS

PROPERTY	RULE	EXAMPLE
Zero Exponent	$a^0 = 1 \; ; \; a \neq 0$ why? $\frac{8}{8} = \frac{2^3}{2^3} = 2^0 = 1$	$(2m)^0 = 1$ $2m^0 = 2 \cdot 1 = 2$ $(-5m^7np^4)^0 = 1$
Negative Exponent	$a^{-n} = \frac{1}{a^n} \; ; \; a \neq 0$	$\frac{-2x^{-3}y^5}{w^3z^{-2}} = \frac{-2x^7y^5z^2}{w^3}$
Product Rule	$a^m \cdot a^n = a^{m+n}$	$a^7 \cdot a^5 = a^{12}$
Power to a Power	$(a^m)^n = a^{mn}$	$(2^3)^5 = 2^{15}$
Product to a Power	$(ab)^n = a^n b^n$	$(2x^2y)^3 = 8x^6y^3$
Quotient Rule	$\frac{a^m}{a^n} = a^{m-n} \; ; \; a \neq 0$	$\frac{x^{12}y^3}{x^8y^5} = \frac{x^4}{y^2}$
Quotient to a Power	$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n} \; ; \; b \neq 0$	$\left(\frac{2x}{3y}\right)^4 = \frac{16x^4}{81y^4}$