

EXPONENT PROPERTIES

Product of Powers	Power of Powers	Power of Products
$a^m \cdot a^n = a^{m+n}$ $5^6 \cdot 5^3 = 5^9$	$(a^m)^n = a^{mn}$ $(3^4)^2 = 3^8$	$(ab)^m = a^m b^m$ $(5z)^7 = 5^7 z^7$

Quotient of Powers	Power of Quotients
$\frac{a^m}{a^n} = a^{m-n}$ $\frac{4^7}{4^2} = 4^5$	$\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$ $\left(\frac{3}{2}\right)^7 = \frac{3^7}{2^7}$

Zero Exponent	Negative Exponents	
$a^0 = 1$ $5^0 = 1$	$a^{-n} = \frac{1}{a^n}$ $2^{-2} = \frac{1}{2^2} = \frac{1}{4}$	$a^n = \frac{1}{a^{-n}}$ $2^2 = \frac{1}{2^{-2}}$