

Name : \_\_\_\_\_

# Laws of Exponents

Name	The Rule	Example
<b>Product of Powers</b>	$x^m \cdot x^n = x^{m+n}$	$x^3 \cdot x^2 = x^5$
<b>Quotient of Powers</b>	$x^m \div x^n = x^{m-n}$ or $x^{-n}$	$\frac{x^7}{x^5} = x^2$
<b>Power of a Power</b>	$(x^m)^n = x^{m \cdot n}$	$(x^4)^6 = x^{24}$
<b>Power of a Product</b>	$(x \cdot y)^n = x^n \cdot y^n$	$(xy)^5 = x^5 \cdot y^5$
<b>Power of a Quotient</b>	$\left(\frac{x}{y}\right)^n = \frac{x^n}{y^n}$	$\left(\frac{2}{3}\right)^2 = \frac{2^2}{3^2} = \frac{4}{9}$
<b>Negative Exponent</b>	$x^{-n} = \frac{1}{x^n}$	$x^{-7} = \frac{1}{x^7}$
<b>Identity Exponent</b>	$x^1 = x$	$8^1 = 8$
<b>Zero Exponent</b>	$x^0 = 1$ ( $x \neq 0$ )	$2^0 = 1$

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