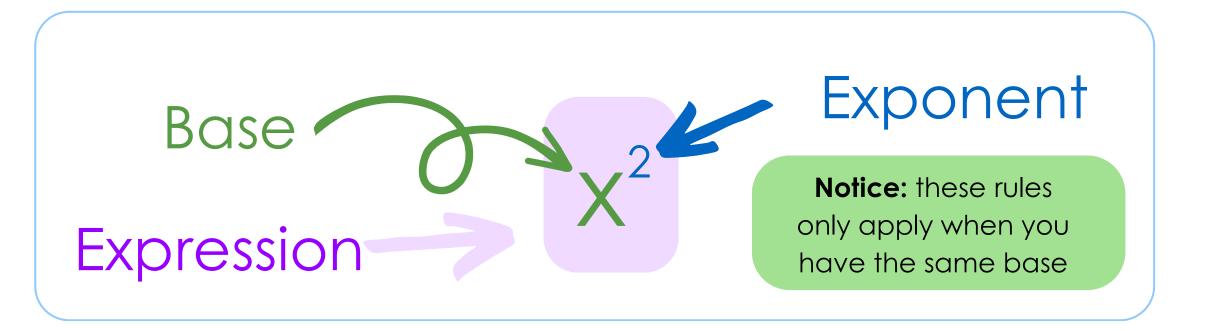
Exponent Rules



Name	Rule	Explanation	Examples
Product Rule	$x^a \bullet x^b = x^{a+b}$	add the exponents	$x^2 \cdot x^3 = x^5$
Power of a Power Rule	$(x^a)^b = x^{a \cdot b}$	multiply the exponents	$(x^2)^3 = x^6$
Power of a Product Rule	$(ax)_p = a_p \cdot x_p$	each base is to the exponent	$(2x)^3 = 2^3 \cdot x^3$ = $8x^3$
Quotient Rule	$\frac{X^{a}}{X^{b}} = X^{a-b}$	subtract the exponents	$\frac{X^5}{X^3} = X^2$
Negative Exponent Rule	$x^{-a} = \frac{1}{x^{a}}$	flip the term in a fraction and change sign of exponent	$\frac{1}{X^{-6}} = X^{6}$ $X^{-8} = \frac{1}{X^{8}}$
Zero Exponent Rule	$x^{0} = 1$	anything to the zero equals 1	$7x^{0}=7(1)=7$
Fractional Exponent Rule	$\sqrt[b]{X^{\alpha}} = X^{\frac{\alpha}{b}}$	inside exponent goes on top, outside number goes on bottom	$\sqrt[9]{x^4} = x^{\frac{4}{9}}$ $\sqrt{x} = x^{\frac{1}{2}}$