

<p>1. $a^m * a^n = a^{m+n}$</p> <ul style="list-style-type: none"> • a is the base number • m and n are exponents with integers • Integers are + or – whole numbers 	<p>Product of Powers</p> <ul style="list-style-type: none"> • Add the exponents <p>Example: $3^2 * 3^4 = 3 * 3 * 3 * 3 * 3 * 3 = 3^6$</p>	
<p>2. $(a^m)^n = a^{mn}$</p>	<p>Power of a Power</p> <ul style="list-style-type: none"> • Multiply the exponents <p>Example: $(3^2)^4 = 3^2 * 3^2 * 3^2 * 3^2 = 3^8$</p>	
<p>3. $(ab)^m = a^m b^m$</p> <ul style="list-style-type: none"> • b is also a base number 	<p>Power of a Product</p> <ul style="list-style-type: none"> • Distributive Property for exponents <p>Example: $(3x)^2 = 3^2 x^2$</p>	
<p>4. $(a^m b^n)^p = a^{mp} b^{np}$</p>	<p>Power of a monomial</p> <ul style="list-style-type: none"> • Distributive Property for exponents <p>Example: $(3^2 x^5)^4 = 3^8 x^{20}$</p>	
<p>5. $\frac{a^m}{a^n} = a^{m-n}$</p>	<p>Quotient of Powers</p> <ul style="list-style-type: none"> • Subtract exponents <p>Example: $\frac{x^5}{x^3} = x^2$</p>	
<p>6. $a^0 = 1 \quad a \neq 0$</p> <ul style="list-style-type: none"> • \neq means not equal 	<p>Example: $\frac{x^3}{x^3} = x^{3-3} = x^0 = 1$</p>	
<p>7. $a^{-n} = \frac{1}{a^n}$</p>	<p>Definition of Negative Exponents</p> <p>Example: $\frac{x^4}{x^6} = x^{4-6} = x^{-2} = \frac{1}{x^2}$</p>	
<p>8. $\frac{a^{-m}}{b^{-n}} = \frac{b^n}{a^m}$</p>	<p>A negative exponent means to switch the location up or down and change the sign of the exponent.</p> <p>Example: $\frac{x^{-2}}{y^{-3}} = \frac{y^3}{x^2}$</p>	
<p>9. $a^1 = a$</p>	<p>Anything to the power of 1 is just itself and anything without an exponent is raised to the power of 1.</p>	