



Math Study Strategies

Exponent Rules Cont.

- **The ratio of two or more numbers or letters raised to a power** is equal with the ratio of the powers.

$$\left(\frac{9x^4}{3x^2}\right)^3 = 3^3(x^{4-2})^3 = 27x^6$$

- **To raise a power to a power**, keep the base and multiply the exponents. If the coefficient is inside the parentheses this needs also to be raised to the particular power.

$$(2x^2)^3 = 8x^6$$

- Any number or letter **raised to zero** is equal one.

$$3x^0 = 3$$

$$x^0 = 1$$

$$(3x)^0 = 1$$

- Any number or letter **raised to a negative exponent** is equal with the reciprocal raised to a positive exponent.

$$x^{-2} = \frac{1}{x^2}$$

$$(3x)^{-2} = \frac{1}{(3x)^2} = \frac{1}{9x^2}$$