

# Zero & Negative Exponents

## I. Zero Power

$$4^3 = 64$$

$$4^2 = 16$$

$$4^1 = 4$$

$$4^0 = 1$$

÷ by the base  
(base is 4)

$$4 \div 4 = 1$$

\* Rule: Anything to the zero power is

**ONE**

$$4^3 = 64$$

$$4^2 = 16$$

$$4^1 = 4$$

$$4^0 = 1$$

$$4^{-1} = \frac{1}{4}$$

$$4^{-2} = \frac{1}{16}$$

$$4^{-3} = \frac{1}{64}$$

Inverses

### III. Steps for Negative Exponents

ex:  $5^{-2}$

Step 1: Change to a positive power

$$5^2$$

Step 2: Simplify exponent

$$5^2 = 25$$

Step 3: Write the # as its inverse  
(put a one on top)

$$\frac{1}{25}$$