



## Exponents

As almost always, in math you bring understandable real life things, to an abstract level:

$$\begin{array}{rcll} 2^3 & = & 2 \times 2 \times 2 & = 8 \\ 2^2 & = & 2 \times 2 & = 4 \\ 2^1 & = & 2 & = 2 \\ 2^0 & = & & \end{array} \left. \begin{array}{l} \div 2 \\ \div 2 \end{array} \right\} \begin{array}{l} \text{no problem} \\ \text{no problem} \\ \text{hmm... no multipli-} \\ \text{cation...} \end{array}$$

huh ???

Now it's time to look at the pattern:  
we subtract 1 from the exponent, the result is half of the previous one.

Let's follow this pattern:

$$\begin{array}{rcl} 2^1 & = & 2 \\ 2^0 & = & 1 \end{array} \left. \right\} \div 2$$

General rule:

$$\text{something}^0 = 1$$

(except zero itself)

Interesting ... let's continue ...