

# Index Laws

## Multiplying

$$p^a \times p^b = p^{a+b}$$

## Dividing

$$p^a \div p^b = p^{a-b}$$

## Power to a power

$$(p^a)^b = p^{a \times b}$$

## Power of zero

$$p^0 = 1$$

## Negative Powers

$$p^{-a} = \frac{1}{p^a}$$

$p^{-a}$  is the  
reciprocal of  $p^a$

## Fractional Powers

$$p^{\frac{a}{b}} = \sqrt[b]{p^a}$$

The numerator of the  
fraction is the power,  
the denominator is  
the root