

Index Laws Summary

1. Product Law

$$x^m x^n = x^{m+n}$$

2. Quotient Law

$$\frac{x^m}{x^n} = x^{m-n}$$

3. Power of a Product

$$(xy)^m = x^m y^m$$

4. Power of a Quotient

$$\left(\frac{x}{y}\right)^m = \frac{x^m}{y^m}$$

5. Power of a Power

$$(x^m)^n = x^{mn}$$

6. Power of Zero

$$x^0 = 1$$

7. Negative Power

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

8. Negative Power of a Quotient

$$\left(\frac{x}{y}\right)^{-m} = \frac{x^{-m}}{y^{-m}} = \frac{y^m}{x^m}$$