Math
Notes

By me (Thanks to for the template SirCharlieMars)

Contents

Chapter 1

1.1 Indices

Definition 1.1.1: Index Laws

1. $a^m \times a^n = a^{n+m}$
2. $a^m \div a^n = a^{n-m}$
3. $(a^m)^n = a^{m \times n}$
4. $a^{-m} = \frac{1}{a^m}$
5. $a^0 = 1$
6. $a^{\frac{m}{n}} = \sqrt[n]{a^m}$

Example 1.1.1 (Laws in action)

1. $2^3 \times 2^7 = 2^{10}$
2. $\frac{3^6}{3^2} = 3^4$
3. $(5^2)^5 = 5^{10}$
4. $7 \times 2^{-2} = \frac{7}{2^2}$
5. $45^0 = 1$
6. $5^{\frac{-3}{7}} = \frac{1}{\sqrt[7]{5^3}}$

Note:-

Indices are used extremely frequently and there are often multiple laws hidden in each question

1.2 Logarithms (logs)

Definition 1.2.1: Log Laws

1. $log_{(a)}(xy) = \log_{(a)}(x) + \log_{(a)}(y)$
2. $log_{(a)}(\frac{x}{y}) = \log_{(a)}(x) - \log_{a}(y)$
3. $log_{(a)}(x^n) = n \log_{(a)}(x) => \log_{(a)}(\frac{1}{x}) = -\log_{(a)}(x)$
4. $log_{(a)}(a) = 1$
5. $log_{(a)}(1) = 0$