

Logarithms – Exponentials

$$y = b^x \quad \text{inverse is} \quad x = b^y$$

A logarithm is an exponent

$$\log_b x = y$$

Convert to logarithms

$$2^3 = 8$$

$$5^2 = 25$$

$$10^3 = 1000$$

Convert to exponentials

$$\log_{10} 100 = 2$$

$$\log_5 125 = 3$$

$$\log_2 32 = 5$$

$$A^m \cdot A^n = A^{m+n}$$

$$\log_b x \cdot y = \log_b x + \log_b y$$
 read the log of the product is the sum of the logs of the factors

$$A^m \div A^n = A^{m-n}$$

$$\log_b x/y = \log_b x - \log_b y$$

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

$$\log A^m = m \cdot \log A$$