

NMSI Calculus

Computing Derivatives Part 4

The Derivatives of Exponential Functions

Base e : $\frac{d}{dx}e^x =$

Any base: $\frac{d}{dx}a^x =$

Examples:

1. $y = 2^x$

2. $y = \left(\frac{1}{4}\right)^x$

3. Compare $y = x^5$ and $y = 5^x$ and $y = 5^5$