

General Exponential Functions

Take the derivative of the following functions:

- $f(x) = x^5 + 5^x$
- $G(u) = (1 + 10^{\ln u})^6$

Evaluate the following integrals:

- $\int_0^4 2^s ds$
- $\int x 2^{x^2} dx$
- $\int \frac{2^x}{2^x + 1} dx$

Logarithmic Differentiation Revisited

Take the derivative of the following functions:

- $y = \frac{\sin x}{(x + 1)^2(2x - 3)^4}$
- $y = (\sin x)^{\ln x}$
- $y = (\tan x)^{\frac{1}{x}}$