

Unit 5: Logarithmic, Exponential, & Inverse Trigonometric Functions
5.4 Bases Other Than e

Let b be a positive real number $\neq 1$, then:

$$\frac{d}{dx} [b^x] = b^x \ln b$$

$$\frac{d}{dx} [\log_b x] = \frac{1}{x \ln b}$$

$$\int b^x dx = \frac{b^x}{\ln b} + c$$

ex. Differentiate:

a) $y = 2^x$

b) $f(x) = 3^{x^2}$

c) $f(x) = \log_5 \sin x$

ex.

$$\int 2^x dx$$

ex.

$$\int_1^e \frac{5^{\ln x}}{x} dx$$

Practice Questions

Pg. 354/ #29 – 34, 37 – 43, 69 – 71, 73 – 76



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