

Integration and Integration

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Part I

Solving Integrals

Chapter 1

Trigonometric Functions

Chapter 2

Hyperbolic Functions

Chapter 3

Solving Integrals

Theorem 3.0.1 (Important Identities).

$$\int x^\alpha dx = \frac{1}{\alpha+1} x^{\alpha+1} + c \quad \text{For all } \alpha \in \mathbb{N} \quad (3.1)$$

$$\int \frac{1}{x} dx = \ln |x| + c \quad \text{If } x \neq 0. \quad (3.2)$$

$$\int e^x dx = e^x + c \quad (3.3)$$

$$\int \cos x dx = \sin x \quad (3.4)$$

$$\int \sin x dx = -\cos x \quad (3.5)$$

$$\int \frac{1}{1+x^2} dx = \arctan(x) + c \quad (3.6)$$

$$\int \quad (3.7)$$