Integration and Integration

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Theorem 3.0.1 (Important Identities)**.**

$$\int x^{\alpha}\,\mathrm{d}x = \frac{1}{\alpha+1}x^{\alpha+1} + c \qquad \text{For all } \alpha \in \mathbb{N} \tag{3.1}$$

$$\int \frac{1}{x}\,\mathrm{d}x = \ln|x| + c \qquad \text{If } x \neq 0. \tag{3.2}$$

$$\int e^{x}\,\mathrm{d}x = e^{x} + c \tag{3.3}$$

$$\int \cos x\,\mathrm{d}x = \sin x + c \tag{3.4}$$

$$\int \sin x\,\mathrm{d}x = -\cos x + c \tag{3.5}$$

$$\int \frac{1}{1+x^{2}}\,\mathrm{d}x = \arctan(x) + c \tag{3.6}$$

$$\int \tag{3.7}$$