

■ Useful Antiderivative formulas

$$\int x^n dx == \frac{x^{n+1}}{n+1}$$

$$\int \frac{1}{x} dx == \log(x)$$

$$\int e^{ax} dx == \frac{e^{ax}}{a}$$

$$\int x e^{ax} dx == e^{ax} \left(\frac{x}{a} - \frac{1}{a^2} \right)$$

$$\int x^2 e^{ax} dx == e^{ax} \left(\frac{x^2}{a} - \frac{2x}{a^2} + \frac{2}{a^3} \right)$$

$$\int \sin[x] dx == -\cos(x)$$

$$\int \cos[x] dx == \sin(x)$$

$$\int x \sin[x] dx == \sin(x) - x \cos(x)$$

$$\int x \cos[x] dx == \cos(x) + x \sin(x)$$

$$\int x^2 \sin[x] dx == -\cos(x) x^2 + 2 \sin(x) x + 2 \cos(x)$$

$$\int x^2 \cos[x] dx == \sin(x) x^2 + 2 \cos(x) x - 2 \sin(x)$$

$$\int \frac{1}{\sqrt{1-x^2}} dx == \sin^{-1}(x)$$

$$\int \frac{1}{1+x^2} dx == \tan^{-1}(x)$$