

LIST OF BASIC INTEGRALS

$$\int k \, dx = kx + C$$

$$\int x^n \, dx = \frac{1}{n+1}x^{n+1} + C \quad (n \neq -1)$$

$$\int \frac{1}{x} \, dx = \ln|x| + C$$

$$\int e^x \, dx = e^x + C \quad (\text{and more generally: } \int a^x \, dx = \frac{1}{\ln(a)}a^x + C)$$

$$\int f(x) + g(x) \, dx = \int f(x) \, dx + \int g(x) \, dx$$

$$\int cf(x) \, dx = c \int f(x) \, dx$$

$$\int \cos(x) \, dx = \sin(x) + C$$

$$\int \sin(x) \, dx = -\cos(x) + C$$

$$\int \sec^2(x) \, dx = \tan(x) + C$$

$$\int \csc^2(x) \, dx = -\cot(x) + C$$

$$\int \sec(x) \tan(x) \, dx = \sec(x) + C$$

$$\int \csc(x) \cot(x) \, dx = -\csc(x) + C$$

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

$$\int -\frac{1}{\sqrt{1-x^2}} \, dx = \cos^{-1}(x) + C$$

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

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