Integrals to Know

$$\int x^n \, dx = \frac{x^{n+1}}{n+1} + C \text{ for } n \neq -1$$

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\int e^x \, dx = e^x + C$$

$$\int a^x \, dx = \frac{a^x}{\ln(a)} + C$$

$$\int \sinh(x) \, dx = \cosh(x) + C$$

$$\int \cosh(x) \, dx = \sinh(x) + C$$

$$\int \operatorname{sech}^2(x) \, dx = \tanh(x) + C$$

$$\int \operatorname{csch}^2(x) \, dx = -\coth(x) + C$$

$$\int \operatorname{sech}(x)\tanh(x) \, dx = -\operatorname{sech}(x) + C$$

$$\int \operatorname{csch}(x)\coth(x)\,dx = -\operatorname{csch}(x) + C$$
$$\int \frac{1}{\sqrt{1+x^2}}\,dx = \sinh^{-1}(x) + C$$
$$\int \frac{1}{\sqrt{x^2-1}}\,dx = \cosh^{-1}(x) + C \text{ for } x > 1$$
$$\int \frac{1}{1-x^2}\,dx = \tanh^{-1}(x) + C \text{ for } |x| < 1$$
$$\int \frac{1}{1-x^2}\,dx = \coth^{-1}(x) + C \text{ for } |x| > 1$$
$$\int \frac{1}{x\sqrt{1-x^2}}\,dx = -\operatorname{sech}^{-1}(x) + C \text{ for } 0 < |x| < 1$$
$$\int \frac{1}{|x|\sqrt{1+x^2}}\,dx = -\operatorname{csch}^{-1}(x) + C \text{ for } x \neq 0$$