$$\int x^n \, dx = \frac{x^{n+1}}{n+1} + C \qquad n \neq -1 \quad x \neq 0$$

$$\int \frac{1}{x} \, dx = \int x^{-1} \, dx = \log_e(x) + C \quad \log_e(x) \equiv \ln(x) \quad x > 0$$

$$\int \sin(ax) \, dx = -\frac{1}{a} \cos(ax) + C \quad a \neq 0$$

$$\int \cos(ax) \, dx = \frac{1}{a} \sin(ax) + C \quad a \neq 0$$

$$\int \sec^2(ax) \, dx = \frac{1}{a} \tan(ax) + C \quad a \neq 0$$

$$\int \operatorname{cosec}^2(ax) \, dx = -\frac{1}{a} \cot(ax) + C \quad a \neq 0$$

$$\int \sec(ax) \tan(ax) \, dx = \frac{1}{a} \sec(ax) + C \quad a \neq 0$$

$$\int \operatorname{cosec}(ax) \cot(ax) \, dx = -\frac{1}{a} \operatorname{cosec}(ax) + C \quad a \neq 0$$

$$\int e^{ax} \, dx = \frac{1}{a} e^{ax} + C \quad a \neq 0$$

$$\int a^x \, dx = \frac{a^x}{\log e(a)} + C \quad a \neq 1 \quad a \neq 0$$

$$\int \frac{1}{\sqrt{a^2 - x^2}} \, dx = \sin^{-1}\left(\frac{x}{a}\right) + C = -\cos^{-1}\left(\frac{x}{a}\right) + C \quad -a < x < a \quad a > 0$$

$$\int \frac{1}{\sqrt{x^2 - a^2}} \, dx = \log_e\left(x + \sqrt{x^2 - a^2}\right) + C \quad x > a > 0$$

$$\int \frac{1}{\sqrt{x^2 + a^2}} \, dx = \log_e\left(x + \sqrt{x^2 + a^2}\right) + C$$

$$\int \frac{1}{a^2 + x^2} \, dx = \frac{1}{a} \tan^{-1}\left(\frac{x}{a}\right) + C \quad a \neq 0$$