The Reduction Formulas:

$$\int \sin^n x \, dx = \frac{-1}{n} \sin^{n-1} x \cos x + \frac{n-1}{n} \int \sin^{n-2} x \, dx$$

$$\int \cos^n x \, dx = \frac{1}{n} \cos^{n-1} x \sin x + \frac{n-1}{n} \int \cos^{n-2} x \, dx$$

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

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

$$\int \sec^n x \, dx = \frac{\sec^{n-1} x \tan x}{n-1} + \frac{n-2}{n-1} \int \sec^{n-2} x \, dx \quad (n \neq 1)$$

$$\int \csc^n x \, dx = \frac{-\csc^{n-1} x \cot x}{n-1} + \frac{n-2}{n-1} \int \csc^{n-2} x \, dx \quad (n \neq 1)$$