

Integrals

$$\int \sec x \tan x dx = \sec x + C$$

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

$$\int \tan x dx = \ln |\sec x| + C$$

$$\int \sec x dx = \ln |\sec x + \tan x| + C$$

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

Trigonometric Identities

$$\sin^2 x = 1 - \cos^2 x.$$

$$\sec^2 x = \tan^2 x + 1$$

$$\tan^2 x = \sec^2 x - 1.$$

$$\sin^2 x = \frac{1}{2}(1 - \cos 2x)$$

$$\cos^2 x = \frac{1}{2}(1 + \cos 2x)$$

$$\sin x \cos x = \frac{1}{2} \sin 2x.$$