

Trigonometric Identities

$$\cos(A + B) = \cos(A)\cos(B) - \sin(A)\sin(B)$$

$$\sin(A + B) = \sin(A)\cos(B) + \cos(A)\sin(B)$$

$$A\cos(\omega t) + B\sin(\omega t) = \sqrt{A^2 + B^2} \cos\left(\omega t - \tan^{-1}\left(\frac{B}{A}\right)\right)$$

$$\sin(2A) = 2\sin(A)\cos(A)$$

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

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