

$$\cos^2 t + \sin^2 t = 1$$

$$\sin^2 \frac{t}{2} = \frac{1 - \cos t}{2}$$

$$\cos 2t = \cos^2 t - \sin^2 t$$

$$L = \int_a^b \sqrt{\left(\frac{dx}{dt}\right)^2 + \left(\frac{dy}{dt}\right)^2} dt$$

$$\vec{v} \cdot \vec{w} = \|\vec{v}\| \|\vec{w}\| \cos \theta$$

$$\sin 2t = 2 \sin t \cos t$$

$$\cos^2 \frac{t}{2} = \frac{1 + \cos t}{2}$$

$$\frac{dy}{dx} = \frac{\frac{dy}{dt}}{\frac{dx}{dt}}$$

$$A = \int_a^b \frac{1}{2} [f(\theta)]^2 d\theta$$

$$\|\vec{v} \times \vec{w}\| = \|\vec{v}\| \|\vec{w}\| |\sin \theta|$$