

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

$$\sin(\theta) = 2\sin\left(\frac{\theta}{2}\right)\cos\left(\frac{\theta}{2}\right)$$

$$\frac{1}{2}\sin\theta = \sin\left(\frac{\theta}{2}\right)\cos\left(\frac{\theta}{2}\right)$$