$$sin^{2}x + cos^{2}x = 1$$

$$1 + tan^{2}x = sec^{2}x$$

$$1 + cot^{2}x = csc^{2}x$$

$$sin(A \pm B) = sinA \cdot cosB \pm sinB \cdot cosA$$

 $cos(A \pm B) = cosA \cdot cosB \mp sinA \cdot sinB$
 $tan(A \pm B) = \frac{tanA \pm tanB}{1 \mp tanA \cdot tanB}$

$$\sin 2x = 2 \cdot \sin x \cdot \cos x$$

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

$$\tan 2x = \frac{2\tan x}{1 - \tan^2 x}$$

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

$$\sin 3x = 3 \sin x - 4 \sin^{3} x$$

$$\cos 3x = 4 \cos^{3} x - 3 \cos x$$

$$\tan 3x = \frac{3 \tan x - \tan^{3} x}{1 - 3 \tan^{2} x}$$

$$\sin\left(\frac{x}{2}\right) = \pm \sqrt{\frac{1-\cos x}{2}}$$

$$\cos\left(\frac{x}{2}\right) = \pm \sqrt{\frac{1+\cos x}{2}}$$

$$\tan\left(\frac{x}{2}\right) = \pm \sqrt{\frac{1-\cos x}{1+\cos x}} = \frac{\sin x}{1+\cos x} = \frac{1-\cos x}{\sin x}$$

$$2 \cdot \cos x \cdot \cos y = \cos(x - y) + \cos(x + y)$$
$$2 \cdot \sin x \cdot \sin y = \cos(x - y) - \cos(x + y)$$

$$2 \cdot \sin x \cdot \cos y = \sin(x + y) + \sin(x - y)$$