$$\sin^2(A) + \cos^2(A) = 1$$

$$\tan^2(A) + 1 = \sec^2(A)$$

$$1 + \cot^2(A) = \csc^2(A)$$

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

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

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

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

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

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

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

$$\cos(2A) = 2\cos^2(A) - 1$$

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

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

$$\frac{\sin(A)}{a} = \frac{\sin(B)}{b} = \frac{\sin(C)}{c}$$

$$c^2 = a^2 + b^2 - 2ab\cos(C)$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$a_n = a + (n-1)d \qquad a_n = ar^{n-1}$$

$$S_n = n\frac{(a_1 + a_n)}{2} \qquad S_n = \frac{n[2a + (n-1)d]}{2} \qquad S_n = \frac{a(1 - r^n)}{1 - r}$$