

# Trigonometry.

## # Basics

angle in radians =  $\frac{\pi}{180} \times$  angle in degrees, Unit circle, reference angle (smaller than  $\frac{\pi}{2}$ ), 三角函数的推广: 从角度到线的长度比.  
坐标系。三角函数正负: ASTC. periodic: 周期性的.

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

$$\sin 2X = 2 \sin X \cos X$$

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

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

推导三角函数公式, 点积。