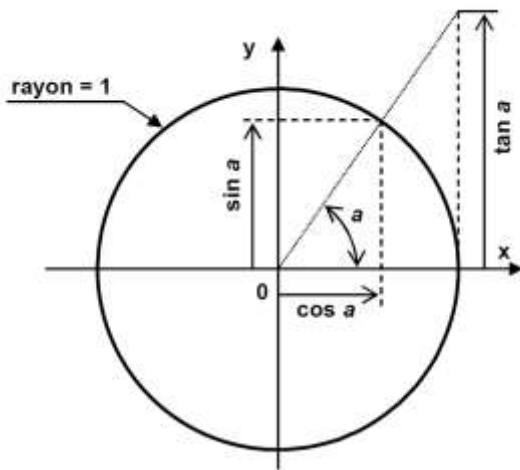




Formulaire de trigonométrie



Relation entre les carrés

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

$$1 + \tan^2 a = \frac{1}{\cos^2 a}$$

Relation sin(arcos)

$$\cos(\arcsin(u)) = \sin(\arccos(u)) = \sqrt{1 - u^2}$$

Formules d'addition des angles

$$\cos(a + b) = \cos a \cos b - \sin a \sin b$$

$$\sin(a + b) = \sin a \cos b + \cos a \sin b$$

$$\tan(a + b) = \frac{\tan a + \tan b}{1 - \tan a \tan b}$$

$$\cos(a - b) = \cos a \cos b + \sin a \sin b$$

$$\sin(a - b) = \sin a \cos b - \cos a \sin b$$

$$\tan(a - b) = \frac{\tan a - \tan b}{1 + \tan a \tan b}$$

Si $a = b$,

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

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

$$\tan(2a) = \frac{2 \tan(a)}{1 - \tan^2(a)}$$

Formules de duplication

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

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

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

$$\tan(2a) = \frac{2 \tan a}{1 - \tan^2 a}$$

Transformations

$$\cos p + \cos q = 2 \cos \frac{p+q}{2} \cos \frac{p-q}{2}$$

$$\cos p - \cos q = -2 \sin \frac{p+q}{2} \sin \frac{p-q}{2}$$

$$\sin p + \sin q = 2 \sin \frac{p+q}{2} \cos \frac{p-q}{2}$$

$$\sin p - \sin q = 2 \cos \frac{p+q}{2} \sin \frac{p-q}{2}$$

$$\cos a \cos b = \frac{1}{2} (\cos(a + b) + \cos(a - b))$$

$$\sin a \sin b = -\frac{1}{2} (\cos(a + b) - \cos(a - b))$$

$$\sin a \cos b = \frac{1}{2} (\sin(a + b) + \sin(a - b))$$

Théorème d'Al Kashi

$$c^2 = a^2 + b^2 - 2ab \cos \gamma.$$

