

Relations fondamentales

$$\sin^2 t + \cos^2 t = 1, \forall t \in \mathbb{R}$$

$$\tan t = \frac{\sin t}{\cos t}; 1 + \tan^2 t = \frac{1}{\cos^2 t}, \forall t \neq \frac{(2k+1)\pi}{2}, k \in \mathbb{Z}$$

Lignes trigonométriques des angles remarquables

t	0	$\pi/6$	$\pi/4$	$\pi/3$	$\pi/2$
$\cos t$	1	$\sqrt{3}/2$	$\sqrt{2}/2$	1/2	0
$\sin t$	0	1/2	$\sqrt{2}/2$	$\sqrt{3}/2$	1
$\tan t$	0	$\sqrt{3}/3$	1	$\sqrt{3}$	∞

Symétries et périodicités

$\sin(-t) = -\sin t$	$\cos(-t) = \cos t$	$\tan(-t) = -\tan t$
$\sin(t + 2\pi) = \sin t$	$\cos(t + 2\pi) = \cos t$	$\tan(t + \pi) = \tan t$
$\sin(\pi - t) = \sin t$	$\cos(\pi - t) = -\cos t$	$\tan(\pi - t) = -\tan t$
$\sin(t + \pi) = -\sin t$	$\cos(t + \pi) = -\cos t$	$\tan(t + \pi) = \tan t$
$\sin\left(t + \frac{\pi}{2}\right) = \cos t$	$\cos\left(t + \frac{\pi}{2}\right) = -\sin t$	$\tan\left(t + \frac{\pi}{2}\right) = -\frac{1}{\tan t}$
$\sin\left(\frac{\pi}{2} - t\right) = \cos t$	$\cos\left(\frac{\pi}{2} - t\right) = \sin t$	$\tan\left(\frac{\pi}{2} - t\right) = \frac{1}{\tan t}$

Formules d'addition des angles

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

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

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

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

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

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

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

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

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

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

Formules de multiplication des angles

$$\sin 2a = 2 \sin a \cos a, \quad \tan 2a = \frac{2 \tan a}{1 - \tan^2 a}$$

$$\cos 2a = \cos^2 a - \sin^2 a$$

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

$$= 1 - 2 \sin^2 a \Rightarrow \sin^2 a = \frac{1 - \cos 2a}{2}$$