1 ERE S **TRIGONOMETRIE**

$(\cos x)^2 \;+\; (\sin x)^2 \;= 1$

$-1 \le \cos x \le 1 \qquad -1 \le \sin x \le 1$

pour $x \ne \dfrac{\Pi}{2} \;+\; k\,\Pi \qquad \tan x = \dfrac{\sin x}{\cos x} \qquad\qquad 1 + (\tan x)^2 = \dfrac{1}{(\cos x)^2}$

$\cos(x + 2\Pi) = \cos x \qquad\qquad \sin(x + 2\Pi) = \sin x$

$\cos(-x) = \cos x \qquad\qquad\qquad \sin(-x) = -\sin x$

$\cos(\Pi - x) = -\cos x \qquad\qquad \sin(\Pi - x) = \sin x$

$\cos(\Pi + x) = -\cos x \qquad\qquad \sin(\Pi + x) = -\sin x$

$\cos\left(\dfrac{\Pi}{2} - x\right) = \sin x \qquad \sin\left(\dfrac{\Pi}{2} - x\right) = \cos x$

$\cos\left(\dfrac{\Pi}{2} + x\right) = -\sin x \qquad \sin\left(\dfrac{\Pi}{2} + x\right) = \cos x$

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

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

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

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

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

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

$\cos(\alpha) = \cos(\beta) \quad$ ssi $\quad \alpha = \beta + 2k\,\Pi \quad$ ou $\quad \alpha = -\beta + 2k\,\Pi \qquad$ (k entier relatif)

$\sin(\alpha) = \sin(\beta) \quad$ ssi $\quad \alpha = \beta + 2k\,\Pi \quad$ ou $\quad \alpha = \Pi - \beta + 2k\,\Pi \qquad$ (k entier relatif)

CERCLE TRIGONOMÉTRIQUE

$(R = 1)$

Axe des tangentes

$\sqrt{3}$

Axe des sinus

$\dfrac{\pi}{2}$

1

$\dfrac{2\pi}{3}$ $\dfrac{\sqrt{3}}{2}$ $\dfrac{\pi}{3}$

$\dfrac{3\pi}{4}$ $\dfrac{\sqrt{2}}{2}$ $\dfrac{\pi}{4}$

$\dfrac{5\pi}{6}$ $\dfrac{1}{2}$ $\dfrac{\pi}{6}$

$\dfrac{\sqrt{3}}{3}$

π -1 $-\dfrac{\sqrt{3}}{2}$ $-\dfrac{\sqrt{2}}{2}$ $-\dfrac{1}{2}$ $\dfrac{1}{2}$ $\dfrac{\sqrt{2}}{2}$ $\dfrac{\sqrt{3}}{2}$ 1 0 Axe des cosinus

$-\dfrac{5\pi}{6}$ $-\dfrac{1}{2}$ $-\dfrac{\pi}{6}$ $-\dfrac{\sqrt{3}}{3}$

$-\dfrac{3\pi}{4}$ $-\dfrac{\sqrt{2}}{2}$ $-\dfrac{\pi}{4}$

$-\dfrac{2\pi}{3}$ $-\dfrac{\sqrt{3}}{2}$ $-\dfrac{\pi}{3}$ -1

-1

$-\dfrac{\pi}{2}$