$\forall x \in \mathbb{R} - \left\{ \dfrac{\pi}{2} + k\pi / k \in \mathbb{Z} \right\}$ $\tan(-x) = -\tan(x)$ $\tan(\pi - x) = -\tan(x)$ $\tan(\pi + x) = \tan(x)$ $\tan\left(\dfrac{\pi}{2} - x\right) = \dfrac{1}{\tan(x)} \quad /x \neq 0[2\pi]$ $\tan\left(\dfrac{\pi}{2} + x\right) = -\dfrac{1}{\tan(x)} \quad /x \neq 0[2\pi]$	$\forall x \in \mathbb{R}$ $Sin(-x) = -Sin(x)$ $Sin(\pi - x) = Sin(x)$ $Sin(\pi + x) = -Sin(x)$ $Sin\left(\dfrac{\pi}{2} - x\right) = Cos(x)$ $Sin\left(\dfrac{\pi}{2} + x\right) = Cos(x)$	$\forall x \in \mathbb{R}$ $Cos(-x) = Cos(x)$ $Cos(\pi - x) = -Cos(x)$ $Cos(\pi + x) = -Cos(x)$ $Cos\left(\dfrac{\pi}{2} - x\right) = Sin(x)$ $Cos\left(\dfrac{\pi}{2} + x\right) = -Sin(x)$
$\tan(x) = \dfrac{Sin(x)}{Cos(x)}$ $1 + \tan^2(x) = \dfrac{1}{Cos^2(x)}$ $Co\tan(x) = \dfrac{1}{\tan(x)}$ $\sin^2(x) = \dfrac{\tan^2(x)}{1 + \tan^2}$	$-1 \le Sin \le 1$ $Sin(x + 2k\pi) = Sin(x)$ $Sin(x + k\pi) = (-1)^k Sin(x)$ $Sin\left(n\dfrac{\pi}{2}\right) = (-1)^n$	$-1 \le Cox \le 1$ $Cos(x + 2k\pi) = Cosx$ $Cos(x + k\pi) = (-1)^k Cosx$ $Cos(n\pi) = (-1)^n$
	$Cos^2(x) + Sin^2(x) = 1$	
$\tan(a+b) = \dfrac{\tan(a) + \tan(b)}{1 - \tan(a).\tan(b)}$ $\tan(a-b) = \dfrac{\tan(a) - \tan(b)}{1 + \tan(a).\tan(b)}$	$Cos(a+b) = Cos(a)Cos(b) - Sin(a)Sin(b)$ $Cos(a-b) = Cos(a)Cos(b) + Sin(a)Sin(b)$ $Sin(a+b) = Sin(a)Cos(b) + Cos(a)Sin(b)$ $Sin(a-b) = Sin(a).Cos(b) - Cos(a).Sin(b)$	
$\tan(a) + \tan(b) = \dfrac{Sin(a+b)}{Cos(a).Cos(b)}$ $\tan(a) - \tan(b) = \dfrac{Sin(a-b)}{Cos(a).Cos(b)}$	$Cos(a)Cos(b) = \dfrac{1}{2}\left[Cos(a+b) + Cos(a-b)\right]$ $Sin(a)Sin(b) = \dfrac{1}{2}\left[Cos(a-b) - Cos(a+b)\right]$ $Sin(a)Cos(b) = \dfrac{1}{2}\left[Sin(a+b) + Sin(a-b)\right]$	
$Cos(2a) = Cos^2(a) - Sin^2(a)$ $\quad = 2Cos^2(a) - 1$ $\quad = 1 - 2Sin^2(a)$ $Sin(2a) = 2Sin(a)Cos(a)$ $\tan(2a) = \dfrac{2\tan(a)}{1 - \tan^2(a)}$	$Cos(a) + Cos(b) = 2Cos\left(\dfrac{a+b}{2}\right).Cos\left(\dfrac{a-b}{2}\right)$ $Cos(a) - Cos(b) = -2Sin\left(\dfrac{a+b}{2}\right).Sin\left(\dfrac{a-b}{2}\right)$ $Sin(a) + Sin(b) = 2Sin\left(\dfrac{a+b}{2}\right).Cos\left(\dfrac{a-b}{2}\right)$ $Sin(a) - Sin(b) = 2Sin\left(\dfrac{a-b}{2}\right).Cos\left(\dfrac{a+b}{2}\right)$	

إذا وضعنا عندنا $t = \tan\left(\dfrac{x}{2}\right)$ فإن : $Cos(x) = \dfrac{1-t^2}{1+t^2}$ و $Sin(x) = \dfrac{2t}{1+t^2}$ و $\tan x = \dfrac{2t}{1-t^2}$	$1 + Cos(a) = 2Cos^2\left(\dfrac{a}{2}\right)$ $1 - Cos(a) = 2Sin^2\left(\dfrac{a}{2}\right)$ $Sin(a) = 2Sin\left(\dfrac{a}{2}\right).Cos\left(\dfrac{a}{2}\right)$	$Cos^2(a) = \dfrac{1+Cos(2a)}{2}$ $Sin^2(a) = \dfrac{1-Cos(2a)}{2}$ $\tan^2(a) = \dfrac{1-Cos(2a)}{1+Cos(2a)}$

$$Sin(x) = Sin(\alpha) \Leftrightarrow \left| \begin{array}{l} x = \alpha + 2k\pi \\ \text{أو} \\ x = \pi - \alpha + 2k\pi \end{array} \right. \quad / k \in \mathbb{Z} \qquad Cos(x) = Cos(\alpha) \Leftrightarrow \left| \begin{array}{l} x = \alpha + 2k\pi \\ \text{أو} \\ x = -\alpha + 2k\pi \end{array} \right. \quad / k \in \mathbb{Z}$$

$$aCos(x) + bSin(x) = \sqrt{a^2+b^2}\,Sin(x+\alpha) \qquad aCos(x) + bSin(x) = \sqrt{a^2+b^2}\,Cos(x-\alpha)$$

$$\text{حيث : و} \begin{cases} Sin(\alpha) = \dfrac{a}{\sqrt{a^2+b^2}} \\ Cos(\alpha) = \dfrac{b}{\sqrt{a^2+b^2}} \end{cases} \qquad\qquad \text{حيث : و} \begin{cases} Cos(\alpha) = \dfrac{a}{\sqrt{a^2+b^2}} \\ Sin(\alpha) = \dfrac{b}{\sqrt{a^2+b^2}} \end{cases}$$

$$\tan(x) = \tan(\alpha) \Leftrightarrow x = \alpha + k\pi \, / k \in \mathbb{Z}$$

x	π	$\dfrac{5\pi}{6}$	$\dfrac{3\pi}{4}$	$\dfrac{2\pi}{3}$	$\dfrac{\pi}{2}$	$\dfrac{\pi}{3}$	$\dfrac{\pi}{4}$	$\dfrac{\pi}{6}$	0
$Sin(x)$	0	$\dfrac{1}{2}$	$\dfrac{\sqrt{2}}{2}$	$\dfrac{\sqrt{3}}{2}$	1	$\dfrac{\sqrt{3}}{2}$	$\dfrac{\sqrt{2}}{2}$	$\dfrac{1}{2}$	0
$Cos(x)$	-1	$-\dfrac{\sqrt{3}}{2}$	$-\dfrac{\sqrt{2}}{2}$	$-\dfrac{1}{2}$	0	$\dfrac{1}{2}$	$\dfrac{\sqrt{2}}{2}$	$\dfrac{\sqrt{3}}{2}$	1
$\tan(x)$	0	$-\dfrac{\sqrt{3}}{3}$	-1	$-\sqrt{3}$	غير معروف	$\sqrt{3}$	1	$\dfrac{\sqrt{3}}{3}$	0