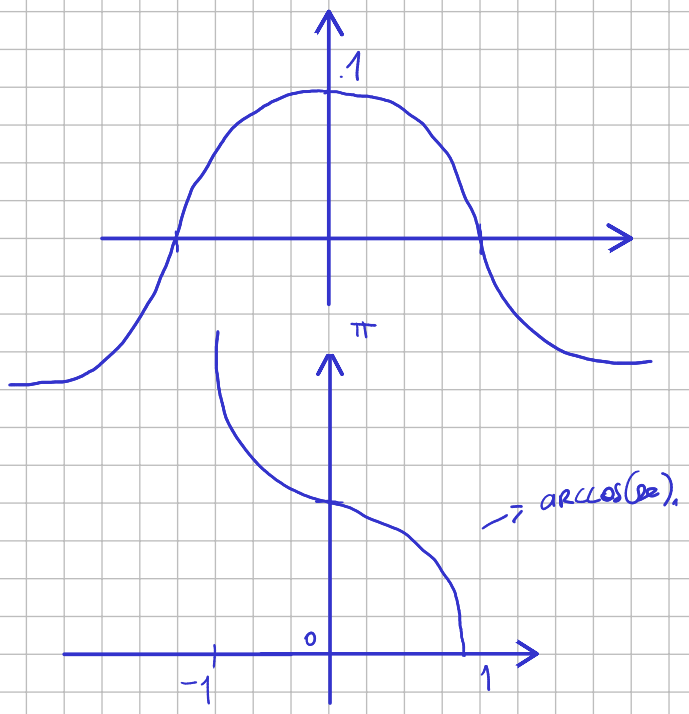
TD29 : Maths,

$\sin(\arcsin(x)) = x$

$\Rightarrow \cos(\arcsin(x)) \times \arcsin'(x) = 1$

$\Rightarrow \arcsin'(x) = \dfrac{1}{\cos(\arcsin(x))} = \dfrac{1}{\sqrt{1-x^2}}$

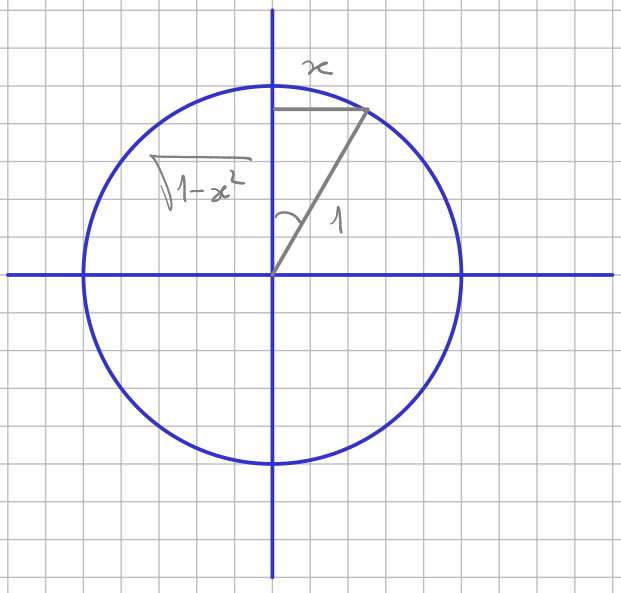


$\arccos : [-1;1] \mapsto [0;\pi]$.

$\cos(\arccos(x)) = x$

$\Rightarrow -\sin(\arccos(x)) \times \arccos'(x) = 1$

$\Rightarrow \arccos'(x) = \dfrac{1}{-\sin(\arccos(x))} = -\dfrac{1}{\sqrt{1-x^2}}$



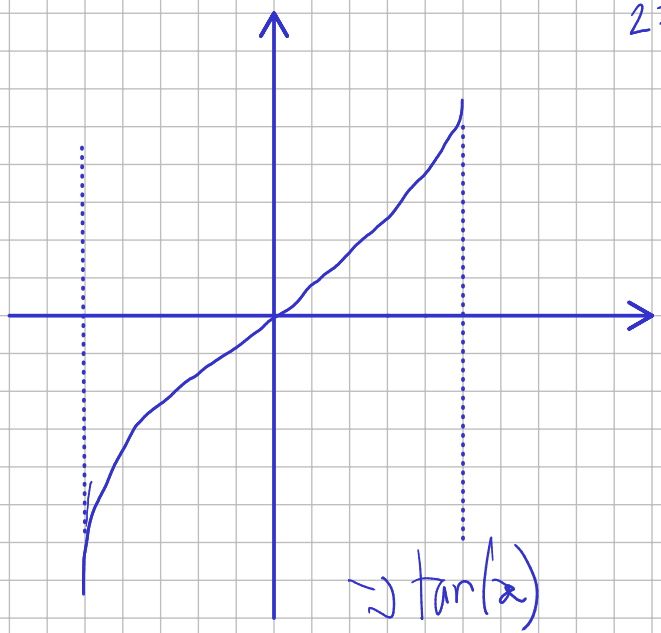
$\arcsin\left(\sin\left(\frac{1984\pi}{3}\right)\right) = \frac{\pi}{3}$.

$\frac{1984\pi}{3}$ $\quad \frac{1984\pi}{3} = (662\times 3 - 2)\pi$

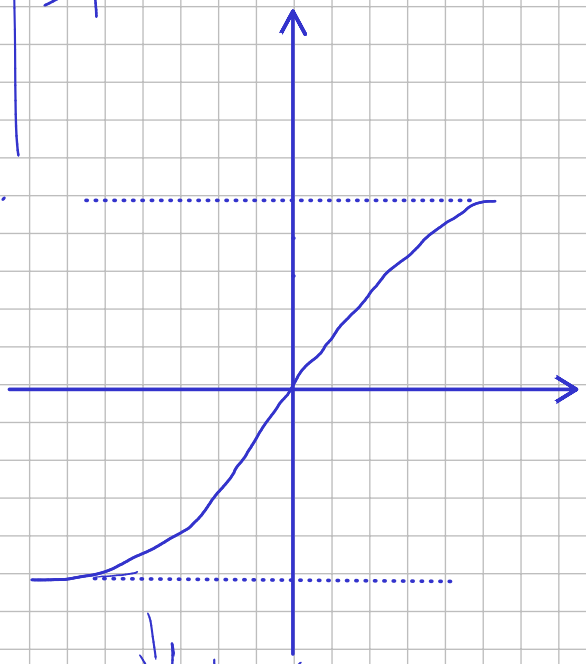
$= \frac{662\times 3\pi - 2\pi}{3} = \cancel{662\pi} - \frac{2\pi}{3}$.

$\arccos\left(\cos\left(\frac{2007\pi}{6}\right)\right) = \frac{\pi}{2}$

$2007 \mid 6$
$18 \quad 334$
$\overline{20}$
$\quad 27$
$\quad 3$.



$\Rightarrow \tan(x)$

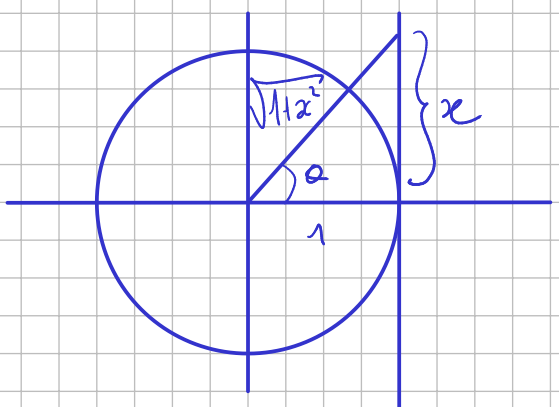


$\downarrow$
$\arctan(x)$.

$\tan(\arctan(x)) = x$

$\Rightarrow \frac{1}{\cos^2(\arctan(x))} \arctan'(x) = 1$

$\Rightarrow \arctan'(x) = \cos^2(\arctan(x))$



$\tan(x+k\pi) = \tan(x)$

$-\tan(-x) = \tan(x)$

$2025 \mid 3$

$0 \quad 675$

$\arctan\left(\tan\left(\frac{2025\pi}{3}\right)\right) = 0.$

$\tan\left(\frac{2025\pi}{3}\right) = \tan(0)$

$\frac{2025}{3}\pi = \frac{(3 \times 675)}{3}\pi = 675\pi$

Exercice 9.1. Déterminer les valeurs suivantes :

(a) $\arcsin(-1/2)$, (b) $\arccos(-\sqrt{2}/2)$, (c) $\arctan(\sqrt{3})$.

$\arcsin\left(-\frac{1}{2}\right) = -\frac{\pi}{6}$

$\sin x = -\frac{1}{2} \Rightarrow x = \frac{5\pi}{3}$ ou $x = -\frac{\pi}{3}$.

$\arctan(\sqrt{3}) = \frac{\pi}{3}$.