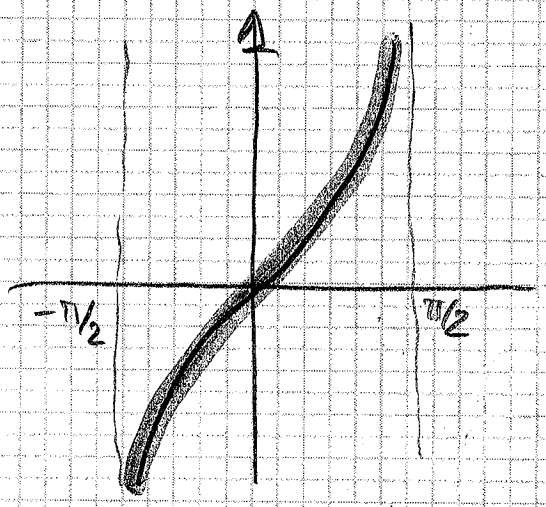
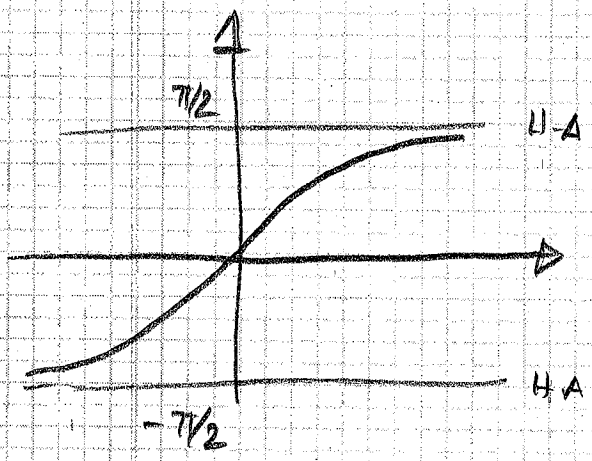
THE INVERSE TANGENT FUNCTION



not one-to-one.



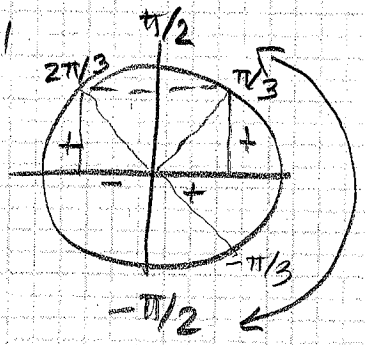
Domain $= (-\infty, \infty)$

Range $= (-\pi/2, \pi/2)$

$\tan^{-1}(\tan x) = x$ if $-\pi/2 \le x \le \pi/2$

$\tan(\tan^{-1} x) = x$ if x is any real number

Ex: $\tan^{-1}(\tan(\pi/3)) = \pi/3$? Yes!



Ex: $\tan^{-1}(\tan(\frac{2\pi}{3})) = \frac{2\pi}{3}$? NO.

$\tan(\frac{2\pi}{3}) = -\tan(\frac{\pi}{3}) =$

$= \tan(-\pi/3)$

$\tan^{-1}(\tan(-\pi/3)) = -\pi/3$

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

odd