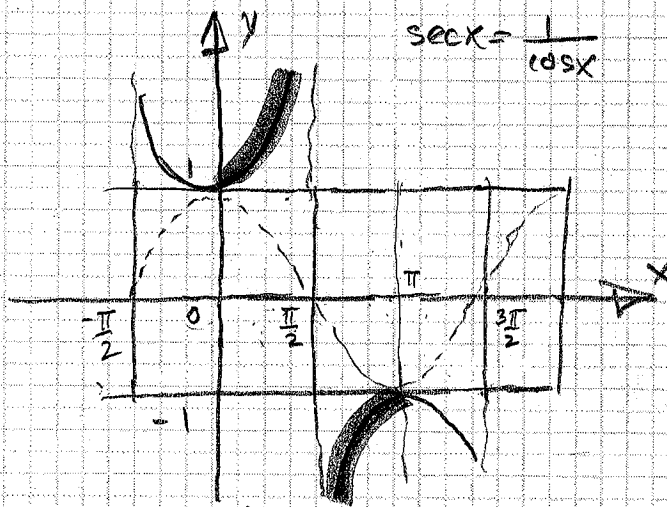


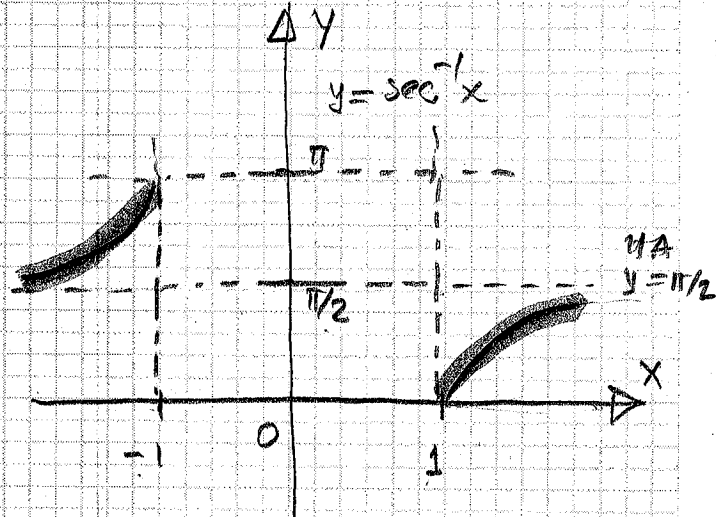
THE INVERSE SECANT FUNCTION



restricted to $[0, \pi]$

$$\text{Domain} = [0, \pi/2) \cup (\pi/2, \pi]$$

$$\text{Range} = (-\infty, -1] \cup [1, +\infty)$$



$$\text{Domain} = (-\infty, -1] \cup [1, +\infty)$$

$$\text{Range} = [1, \pi/2) \cup (\pi/2, \pi]$$

$$\boxed{\sec^{-1}(\sec x) = x}$$

if $0 \leq x < \pi/2$ or $\pi/2 < x \leq \pi$

$0 \leq x \leq \pi$ and $x \neq \pi/2$

$$\boxed{\sec(\sec^{-1} x) = x}$$

if $x \leq -1$ or $x \geq 1$

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

Ex: Find $\sec^{-1}(\sec(4\pi/3)) = 4\pi/3$? No

$$\sec(4\pi/3) = \sec(2\pi/3)$$

$$\sec^{-1}(\sec(4\pi/3)) = \sec^{-1}(\sec(2\pi/3)) = 2\pi/3$$

