$$y = \sec^{-1} x \Leftrightarrow y = \cos^{-1}\left(\frac{1}{x}\right) \tag{1}$$

$$\begin{aligned} \sum_{k=1}^{n} k &= 1 + 2 + \cdots + n \\ &= \frac{n(n+1)}{2} \end{aligned} \tag{2}$$

$$\begin{pmatrix} \cos x & -\sin x \\ \sin x & \cos x \end{pmatrix} \quad f(x) = \begin{cases} 2 + \sqrt{x} & ; \quad x \geq 1 \\ \dfrac{x}{2} + \dfrac{x}{2} & ; \quad 0 \leq x \leq 1 \\ 0 & ; \quad \text{otherwise} \end{cases}$$

Polynomial function	example of $f(x)$
linear	$3x + 2$
quadratic	$x^2 - 3x + 4$
cubic	$2x^3 - 1$

Table 1: Polynomial function

$$\sin^2 x + \cos^2 x = 1$$
$$\tan^2 x + 1 = \sec^2 x$$
$$\cos^2\left(\frac{\theta}{2}\right) = \frac{1 + \cos\theta}{2}$$

$$\begin{aligned} x + 2y - z &= 0 \\ 2x - 3y + 5z &= 3 \\ -3y + 2z &= -8 \end{aligned}$$

$$\begin{vmatrix} 7 & 1 \\ 5 & 10 \end{vmatrix} = 7 \times 10 - 1 \times 5 = 65$$

$$A = \begin{bmatrix} 2 & 3 \\ 1 & -4 \end{bmatrix} \Rightarrow \qquad \det(A) = 2 \cdot (-4) - 3 \cdot 1 = -11$$

p	$\neg p$
T	F
F	T

Algorithm	Average case	Best case
Insertion Sort	$O(n^2)$	$O(n)$

Table 2: Time Complexity of Sorting Algorithms