$i^2 = -1$

$|C| = \sqrt{a^2 + b^2}$

$C_1 \times C_2 = (a_1 + b_1 i)(a_2 + b_2 i)$

$C = a + bi$: comp

A, B: Matrices

V: vector

$$\frac{C_1}{C_2} = \frac{a_1 a_2 + b_1 b_2}{a_2^2 + b_2^2} + \frac{a_2 b_1 - a_1 b_2}{a_2^2 + b_2^2}$$

conjugado

$\overline{C} = a - bi \qquad C \times \overline{C} = |C|^2$

$\overline{C_1 \overset{\times}{+} C_2} = \overline{C_1} \overset{\times}{+} \overline{C_2}$

cartesianas $(|C| \cos\theta, |C| \operatorname{sen}\theta)$

polares $(|C|, \arctan(\frac{b}{a}))$

$$\frac{C_1}{C_2} = \left(\frac{\rho_1}{\rho_2} ; \theta_1 - \theta_2\right)$$

$C = \rho e^{i\theta}$

$C^n = (\rho^n, n\theta)$

$A^T[i,k] = A[k,i]$

$\overline{A}[i,k] = A\,\overline{[i,k]}$

$$A \star A_1 [j,k] = \sum_{k=0}^{n-1} (A[j,h] \times B[h,k])$$

$A^\dagger [j,k] = (\overline{A^T})$

$\langle A, A_2 \rangle = \operatorname{trace}(A^\dagger \star A_2)$

$$\operatorname{trace}(A) = \sum_{i=0}^{n-1} C[i,i]$$

$A_{n \times n} \mid A^\dagger = A$ matriz hermitiana

$\forall_{i,j} \mid A[i,i] \neq 0 \ \&\& \ A[i,j] == 0$ Matriz diagonal

$A \star A^\dagger = I_n = U$ matriz unitaria $\langle UV, UV' \rangle = \langle V, V' \rangle$

$|UV| = |V|$

si A es hermitiana y diagonal, los valores de la diagonal son eigenvalues

$$\begin{bmatrix} a_0 \\ a_1 \end{bmatrix} \otimes \begin{bmatrix} b_0 \\ b_1 \end{bmatrix} = \begin{bmatrix} a_0 b_0 \\ a_0 b_1 \\ a_1 b_0 \\ a_1 b_1 \end{bmatrix}$$

$V \otimes V' = C_1(V_1 \otimes V_1') + C_2(V_2 \otimes V_2') \dots + C_n(V_n \otimes V_n')$

$$V = \begin{bmatrix} a_1 \\ a_2 \\ \vdots \\ a_n \end{bmatrix}$$

suma, resta, mult. x escalar es igual que en $\mathbb{R}^n$

distancia $d(V_1, V_2) = \sqrt{\langle V_1 - V_2, V_1 - V_2 \rangle}$

prod interno $\langle V_1, V_2 \rangle = V_1^\dagger \times V_2 = \langle V_2, V_1 \rangle$

$\langle V_1 + V_2, V_3 \rangle = \langle V_1, V_3 \rangle + \langle V_2, V_3 \rangle$

$\langle V_1, V_2 + V_3 \rangle = \langle V_1, V_2 \rangle + \langle V_1, V_3 \rangle$

long ó Norm $|V| = \sqrt{\langle V, V \rangle}$

$A \cdot$ eigenvalue = eigenvalue $\cdot$ eigenvector

$$P(|K_n\rangle) = \frac{|C_n|}{\sum_{i=0} |C|}$$

2 vectores son $\perp$ si $\langle V_1, V_2 \rangle = 0$

$$\langle f, g \rangle = \sum_{i=0}^{\infty} \overline{f(j)}\, g(j) \qquad \text{func } (\mathbb{N}, \mathbb{C})$$

$$\langle f, g \rangle = \int_a^b f(t)\, g(t)\, dt \qquad \text{func } ([a,b], \mathbb{C})$$

1 SQUARE =