ESTAMOS OBSESIONADOS CON EL TIEMPO PORQUE VIVIMOS EN UN ENGRANAJE DE UN RELOJ INMENSO.

~~[illegible]~~ ALL CELESTIAL OBJECTS AS WE SEE THEM, SPECIALLY THE SUN AND MOON GAVE US AN OPPORTUNITY TO WONDER OUTSIDE THE BOX.

BUT (TIME OUT OF PERCEPTION) IS EVOLVING ALL THE TIME, IF THERE IS SOME KIND OF ENERGY THAT

EL TIEMPO ES LA CORRIENTE, Y LA IMPEDANCIA ES LA QUE MODIFICA (NOSOTROS ~~Y NUESTROS~~ ~~[illegible]~~

Y RAMIFICA LA CORRIENTE EN UN CIRCUITO DE IDEAS QUE DA COMO RESULTADO UN VOLTAJE A BORNES DE CADA CIRCUITO-DE-TIEMPO-MIN QUE ES PARTE DE UN MAPA BIYECTIVO (VOLTAJE[n] ⟷ SYMBOLO[n] (DISCRETIZADO)

COMO EXISTIMOS DENTRO DE UN INMENSO
RELOJ QUE SIEMPRE SE EXPANDE
Y COMPRIME SU INFORMACIÓN SEGÚN SUS
COMO MÍNIMOS DE REPRESENTACIÓN: (R_0, T_0)
Y SUS CAPACIDADES DE RELACIONAR
(COMO ESPACIO TIEMPO) & [illegible]

7, 5, π, e, i

T_0

T_{MED}

$T_{COMÚN}$

K

ω_0

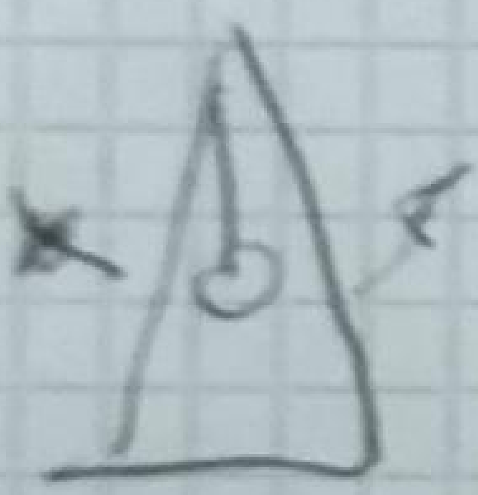
EL TIEMPO SE PARECE A LA GRAVEDAD EN
CUANTO ~~ES~~ A LA / PODRÍA SER "EMERGENTE" Y ~~AL MISMO~~ DESDE LA MISMA ÓPTICA
~~TIEMPO EN~~ EN ESCALAS HUMANAS Y A BAJAS VELOCIDADES SON TAN ~~[illegible]~~
COTIDIANOS Y TAN ELEMENTALES, QUE
SE CONVIERTEN EN LAS BASES
SOBRE LO QUE CONSTRUIMOS
LA INTUICIÓN, Y CÓMO NOS COMUNICAMOS PARA
HABLAR DE ESTAS COSAS
EL TIEMPO SE PARECE AL CAMPO
ELECTROMAGNÉTICO, EN CUANTO
A QUE DOS OSCILACIONES (ORTOGONALES ENTRE SI)
PERMITEN QUE PODAMOS DIBUJAR SÍMBOLOS
QUE REPRESENTAN EL FENÓMENO OBSERVADO

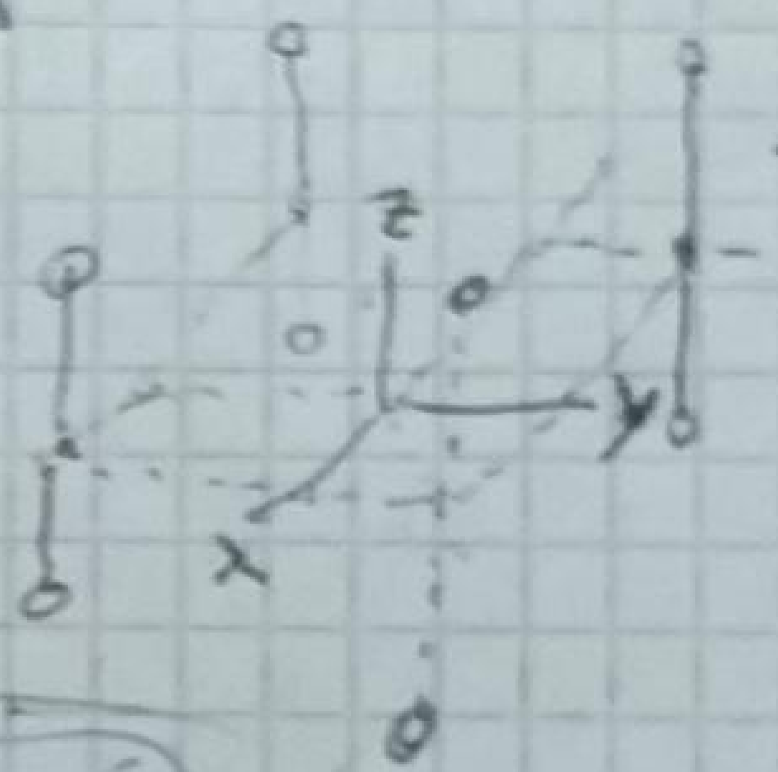
[illegible]  RELOJ ANIMADO CON $\theta = e^{\frac{i2\pi}{13}}$

EL TIEMPO TAMBIÉN SE PARECE A LOS PROCESOS NATURALES (O LO HABITAN), SE PARECE AL MOVIMIENTO GALÁCTICO, ATÓMICO, Y A UN PARTIDO DE TENIS, O AJEDREZ, SIEMPRE HAY DOS PASOS (OSCILACIONES), QUE PERMITEN ORDENAR EVENTOS

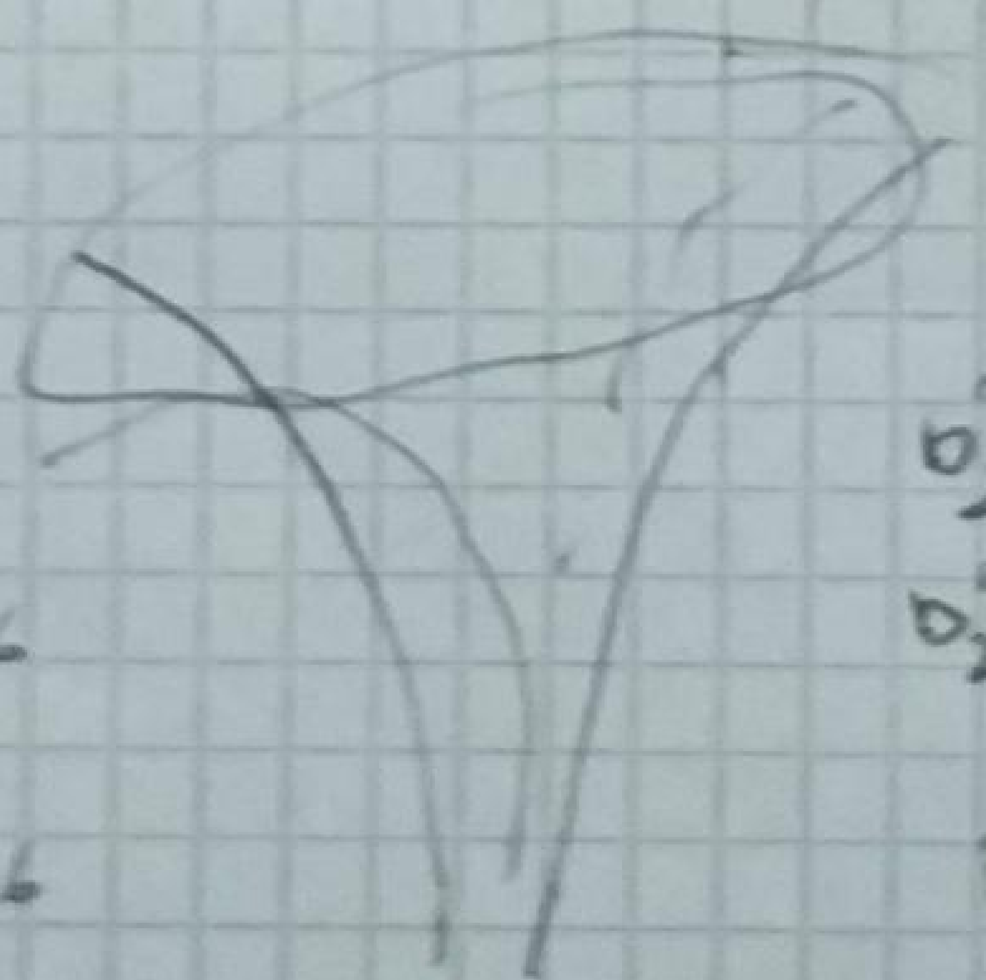
A ~~[illegible]~~ FLUYENDO EN UNA U (PARTÍCULAS) OTRA DIRECCIÓN, CONTENIDO EN UNA ESTRUCTURA BI-CÓNICA

O EN UNA MASA EN OSCILACIÓN ARMÓNICA





0 MOD3 · 0
1 MOD1 ∅
2 MOD1 -1
3 MOD1



$b_2^0\ b_1^0\ b_0^0 = +1, +1, +1$

$b_2^1\ b_1^1\ b_0^1$

$$b_0^{(n)} = \begin{cases} +1 & \text{if } n \equiv 0 \bmod 2 \\ -1 & \text{if } n \not\equiv 0 \end{cases}$$

$$b_i^{(i)} = \begin{cases} +1 & \text{if } n \equiv 0 \bmod 4 \\ -1 & \text{if } n \not\equiv 0 \bmod 4 \end{cases}$$

X, Y, Z × 8) 16
X, Z, Y × 8
Y, X, Z × 8) 16
Y, Z, X × 8
Z, X, Y × 8) 16
Z, Y, X × 8

X, Y, Z ~ 000
X, Y, -Z - 001
X, -Y, Z ~ 010
011
-X, +Y, +Z ~ 100

000	x y z	+ + +
001	x y -z	+ + -
010	x -y z	+ - +
011	x -y -z	+ - -
100	-x y z	- + +
101	-x y -z	- + -
110	-x -y z	- - +
111	-x -y -z	- - -

$n = [0, 1, 2, 3, \dots N-1]$ → INDEX $\in \mathbb{N}$

$S_n = [S_0, S_1, S_2, \dots S_{N-1}]$ → DISCRETIZED REPRESENTATION OF VALUE OF SOME PROCESS (ISOLATED REP OF REALITY) $\in \mathbb{R}$

$S_n \leq M$

M COULD BE DEFINED ~~FROM~~

$M \propto (MAX(S) + 1)$

INDEX BENDING

$\Theta = e^{\frac{2\pi i}{T_\Theta}}$

$\hat{\Theta}_n = \Theta^n = \hat{\Theta}[n]$

$\delta_\Theta[n] \begin{cases} \delta_0 & \text{IIF } n = 0 \text{ MOD } T_\Theta \\ 0 & \text{IIF } n \neq 0 \text{ MOD } T_\Theta \end{cases} = \delta_\Theta[n]$

$\hat{n}_n = \delta_\Theta[n] + \Gamma_{n-1}$

$\boxed{\cancel{\hat{n}_n = \delta_n + \Gamma_{n-1}}}$

$\boxed{\Gamma_n = \begin{cases} \Gamma_{n-1} + \delta_n & \text{FOR } n \geq \\ 0 & \text{FOR } n < \end{cases}}$

$\boxed{\Gamma_n = \Gamma_{n-1} + \delta_n}$

TAU $\Gamma[n] = \Gamma[n-1] + \delta_n$

$\cancel{\hat{n}_n = \Gamma_{n-1} + \delta_n}$

$\cancel{\hat{n}[n] = \Gamma[n-1] + \delta[n]}$

$\boxed{\hat{n}_n = \Gamma_n \cdot \Theta^n}$

$\boxed{\hat{n}[n] = \Gamma[n] \cdot \Theta^n}$

$\hat{S}[n] = \hat{S}_n \mid S[n] = S_n$

$\hat{S}_n = |z_n| \cdot \varsigma^{S_n}$ K

$\hat{S}[n] =$

NOTA

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$$\varphi \begin{cases} n \\ \text{or} \\ S_n \end{cases}$$

$$n = [0, 1, 2, 3, \ldots N-1]$$

$$\Theta = e^{\frac{2\pi i}{T_\Theta}}$$

$$\boxed{\delta_n = \begin{cases} \delta_0 & \text{if } n = 0 \bmod T_\Theta \\ 0 & \text{if } n \neq 0 \bmod T_\Theta \end{cases}}$$

$$\boxed{\delta_0 = \frac{1}{T_\Theta}}$$

$$\boxed{\Gamma_n = \Gamma_{n-1} + \delta_n}$$

$$\boxed{\hat{n}_n = \Gamma_n \cdot \Theta^n}$$

$$\hat{x}_y = \Gamma_y \Theta^y$$

$$\varphi = e^{\frac{2\pi i}{T_\varphi}}$$

$$S_n = 0 \bmod T_\varphi$$

$$\delta_{S_n} = \begin{cases} \delta_{S_0} & \text{if } \\ 0 & \text{if } n \neq 0 \bmod T_\varphi \end{cases}$$

$$\boxed{\delta_{S_0} = \frac{1}{T_\varphi}}$$

$$\boxed{\Gamma_{S_n} = \Gamma_{S-S_{n-1}} + \delta_{S_n}}$$

$$\boxed{\hat{S}_n = \Gamma_{S_n} \varphi^{S_n}}$$

$$S_n = S$$

$$\boxed{\hat{S}_n = \Gamma_S \cdot \varphi^S}$$

$$h = \frac{1}{2}$$

$$\Gamma_{|\bar{n}|} = \Gamma_{norm} = \sqrt{K} \quad \text{FOR } K \in \mathbb{R}$$

$$\Gamma_{\phi p} = \sqrt{P} \quad \text{FOR } P \in \mathbb{R}$$

$$\hat{\Gamma}_\phi = h \cdot (1 + \Gamma_\phi) \longrightarrow \phi_{op} =$$

$$\hat{\Gamma}_{|\bar{n}|} = h \cdot (1 + j\Gamma_{|\bar{n}|})$$

$$\hat{Z}_\phi[\varphi] = (\varphi + 1) \cdot e^{\frac{2\pi i}{T_\phi}(\varphi)}$$

$$\hat{Z}_{|\bar{n}|}[\varphi] = (\varphi + 1) \cdot \hat{\Gamma}_{|\bar{n}|}$$

$$\hat{\rho}[\varphi] = \frac{\hat{\Gamma}_{|\bar{n}|} \cdot e^{\frac{2\pi i}{T_\phi}}}{}$$

$$\boxed{\begin{aligned} \hat{\Gamma}_\phi &= h \cdot (1 + \sqrt{P_1}) \\ \hat{\Gamma}_{\bar{n}} &= h(1 + j\sqrt{P_2}) \end{aligned}}$$

$$\rho[\varphi] = \frac{Z_{|\bar{n}|}[\varphi]}{Z_\phi[\varphi]}$$

$$\cancel{\rho[\varphi] = \frac{2\pi i}{T_\phi} \varphi}$$

$\nabla \cdot \Gamma^{n} =$

MIT (12) MAXWELL ZO.

$$\vec{\nabla} \cdot \left\{ \frac{\partial}{\partial x}, \frac{\partial}{\partial y}, \frac{\partial}{\partial z} \right\} = O_x \cdot \hat{x} + \frac{\partial}{\partial x}\hat{x} + \frac{\partial}{\partial y}\hat{y} + \frac{\partial}{\partial z}\hat{z}$$

- $\nabla \cdot A = \frac{\partial A_x}{\partial x} + \frac{\partial A_y}{\partial y} + \frac{\partial A_z}{\partial z}$ $\boxed{\text{DIVERGENCE}}$

ROTOR $\vec{\nabla} \times \vec{A} = \begin{vmatrix} \hat{x} & \hat{y} & \hat{z} \\ \frac{\partial}{\partial x} & \frac{\partial}{\partial y} & \frac{\partial}{\partial z} \\ A_x & A_y & A_z \end{vmatrix} = \hat{x}\left(\frac{\partial A_z}{\partial y} - \frac{\partial A_y}{\partial z}\right) + \hat{y}\left(\frac{\partial A_z}{\partial x} - \frac{\partial A_x}{\partial z}\right) + \hat{z}\left(\frac{\partial A_y}{\partial x} - \frac{\partial A_x}{\partial y}\right)$

$\boxed{\hat{A} = \hat{x} \cdot A_x + \hat{y} A_y + \hat{z} A_z}$

$A_x = \Gamma_{x_n}$

$A_x = A_x[n]$

$A_y = A_y[n]$

$A_z = A_z[n]$

- $\hat{\nabla}_n = O_{x_n}\hat{x} + O_{y_n}\hat{y} + O_{z_n}\hat{z} = O_e$

$O_n = \boxed{\frac{\Delta}{\Delta x_n}\hat{x} + \frac{\Delta}{\Delta y_n}\hat{y} + \frac{\Delta}{\Delta z_n}\hat{z} = \hat{\nabla}_n}$

$\hat{\nabla}_n \cdot \vec{A} = \frac{\Delta A_x}{\Delta x_n} + \frac{\Delta A_y}{\Delta \cancel{y}_n} + \frac{\Delta A_z}{\Delta z_n}$

$\Delta A_x = A_x[n] - A_x[n-1]$

$\Delta x_n = x[n] - x[n-1]$

$\hat{\nabla}_n \times \vec{A} = \begin{vmatrix} \hat{x} & \hat{y} & \hat{z} \\ \frac{\Delta}{\Delta x_n} & \frac{\Delta}{\Delta y_n} & \frac{\Delta}{\Delta z_n} \\ A_{x_n} & A_{y_n} & A_{z_n} \end{vmatrix}$

$\hat{O} \cdot A_x = \frac{\Delta A_x}{\Delta x_n} =$

$\hat{O}_n A_{x_n} = \frac{A_{x_n} - A_{x_{n-1}}}{x_n - x_{n-1}}$

NOTA

HOJA N°

FECHA

$$\hat{O}_{x_n} = \frac{A_{x_n} - A_{x_{n-1}}}{(x_n - x_{n-1}) A_{x_n}}$$

$$\hat{O}_{y} = \frac{A_{y_n} - A_{y_{n-1}}}{(y_n - y_{n-1}) A_{y_n}}$$

$$\hat{O}_{z} = \frac{A_{z_n} - A_{z_{n-1}}}{(z_n - z_{n-1}) A_{z_n}}$$

$$\hat{\nabla}_n \times \vec{A}_n = \begin{vmatrix} \hat{x} & \hat{y} & \hat{z} \\ \hat{O}_{x_n} & \hat{O}_{y_n} & \hat{O}_{z_n} \\ A_{x_n} & A_{y_n} & A_{z_n} \end{vmatrix}$$

TEST PRIMES

$2^p - 1 = z_p$

p 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41

$2^2 - 1 = 3$ $+1$

$2^3 - 1 = 7$ $+5$

$2^5 - 1 = 31$ $+29$

~~$2^6 - 1 = 63$~~

$2^7 - 1 = 127$ 124

$2^{11} - 1 = 2047$

if (isprim(n)):

MARCAR ESTE TIPO DE PRIMOS

$$\boxed{2^{P_1} - 1 = P_2}$$

$2^{P_1} = P_2 + 1$

$P_1 \log 2 = \log(P_2 + 1)$

$$\boxed{P_1 = \frac{\log(P_2 + 1)}{\log 2}}$$

$P_1 = \log_2(P_2 + 1)$

2^7

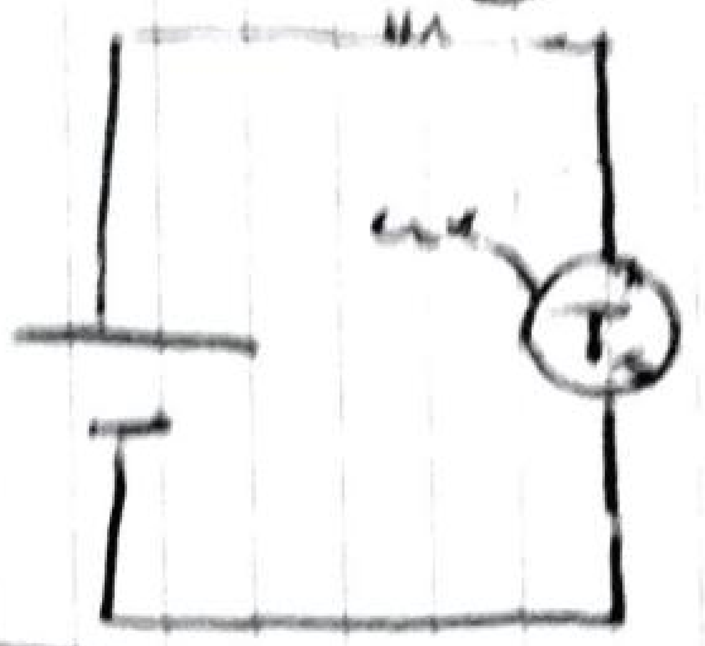
$\log_2(7) = 2,$

T DAMY TRANSISTOR IN SWITCH MODE

T_x

T_B → BLOCK STATE IN TRANSISTOR

T_C – CONDUCT STATE IN TRANSISTOR

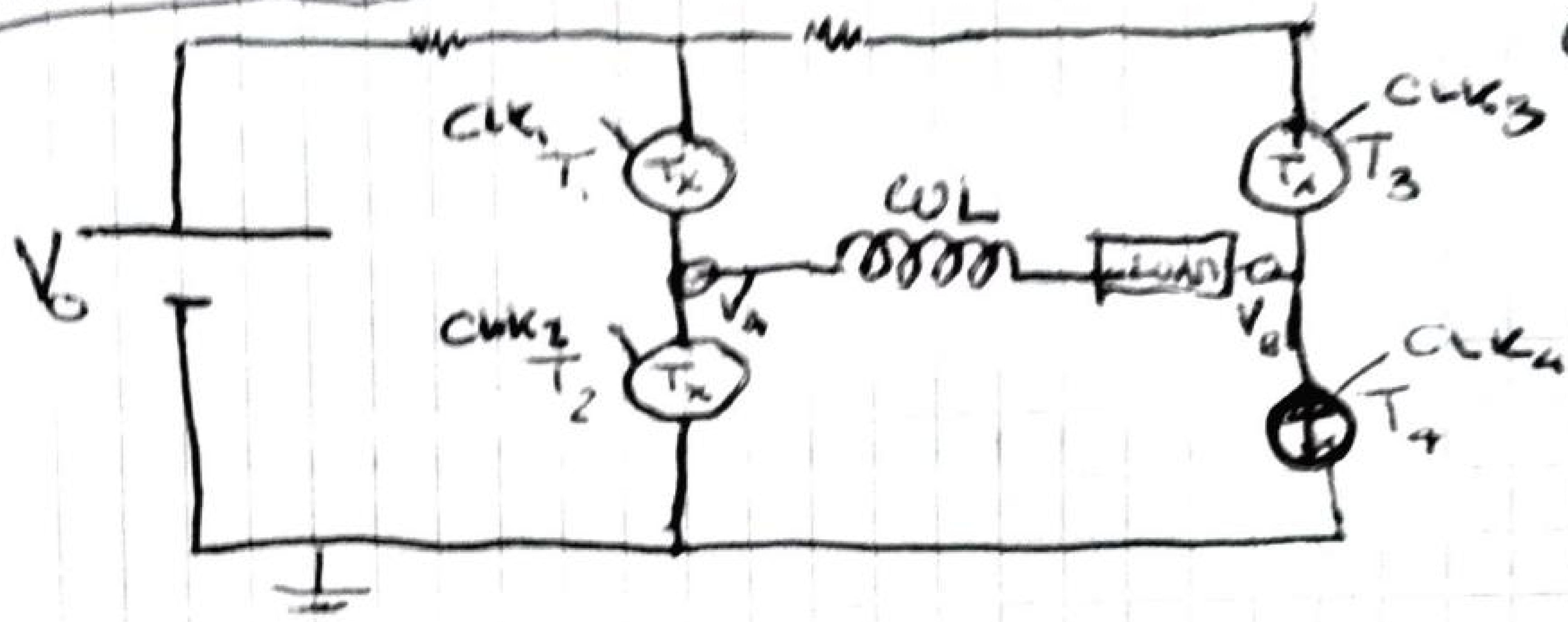


→ EL CLK(1) ⎍ → $T_x = T_C$

CLK(0) ___ → $T_x = T_B$

SIMULAR

VIVADO 2023.2

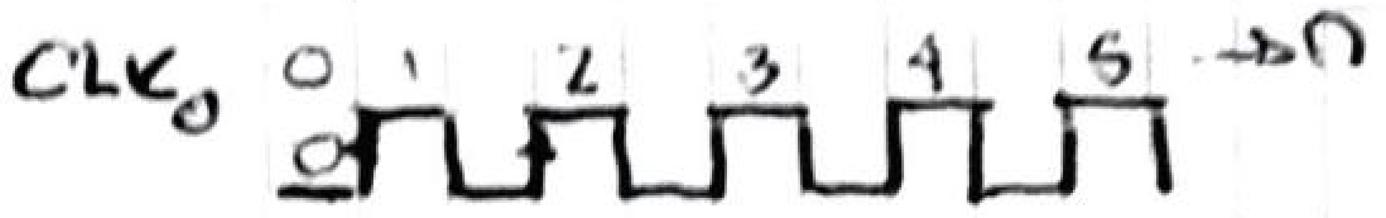


$\log_2(\log_2(x)) =$

$\log_2 x = 2$

$2^2 = x$

$x = 4$



V_0 → CONSTANT

$V_{AC} = V_A - V_B$

n	T_1	T_2	T_3	T_4	V_A	V_B	V_{AC}	V_{out}
0	0	1	1	0	0	V_0	$-V_0$	V_-
1	0	1	1	0	0	V_0	$-V_0$	V_-
2	"	"	"	"	"	"	"	
3	"	"	"	"	"	"	"	
4	"	"	"	"	"	"	"	
5	"	"	"	"	"	"	"	
6	"	"	"	"	"	"	"	
7	0	1	1	0	0	V_0	$-V_0$	V_-
8	1	0	0	1	V_0	0	V_0	V_+
9	1	0	0	1	V_0	0		V_+
10								V_+
11								V_+
12								V_+
13								V_+
14								V_+
15								V_+

$V_{AB_1} =$

V_{OUT} ⎦

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$P_0 = 13$

$n = [0, 1, 2, \cdots, 2^6]$

cyclic $S_n = [0, 8, 3, 11, 6, 1, 9, 4, 12, 7, 2, 10, 5]$

cyclic $T_n = [0, 9, 1, 8, 2, 4, 15, 3, 4, 14, 8, 1, 9]$

$P_n = [13, 17, 19, 23, 29, 31, 37, 41, 43, \cdots]$

$b_n \to$ is designated

$F_n = [0, 1, 1, 2, 3, 5, 8, 13, 21, 34, \cdots]$

$a = [0, 1, 0, 1, 0, 1 \cdots]$ (E O E)

$c = [1, 0, 1, 0, 1, 0 \cdots]$

- $$\boxed{Z_P[n] = \text{FLOOR}(a_n \cdot n + b_n \cdot F_n + c_n \cdot P_0) + S[n] + T[n]}$$

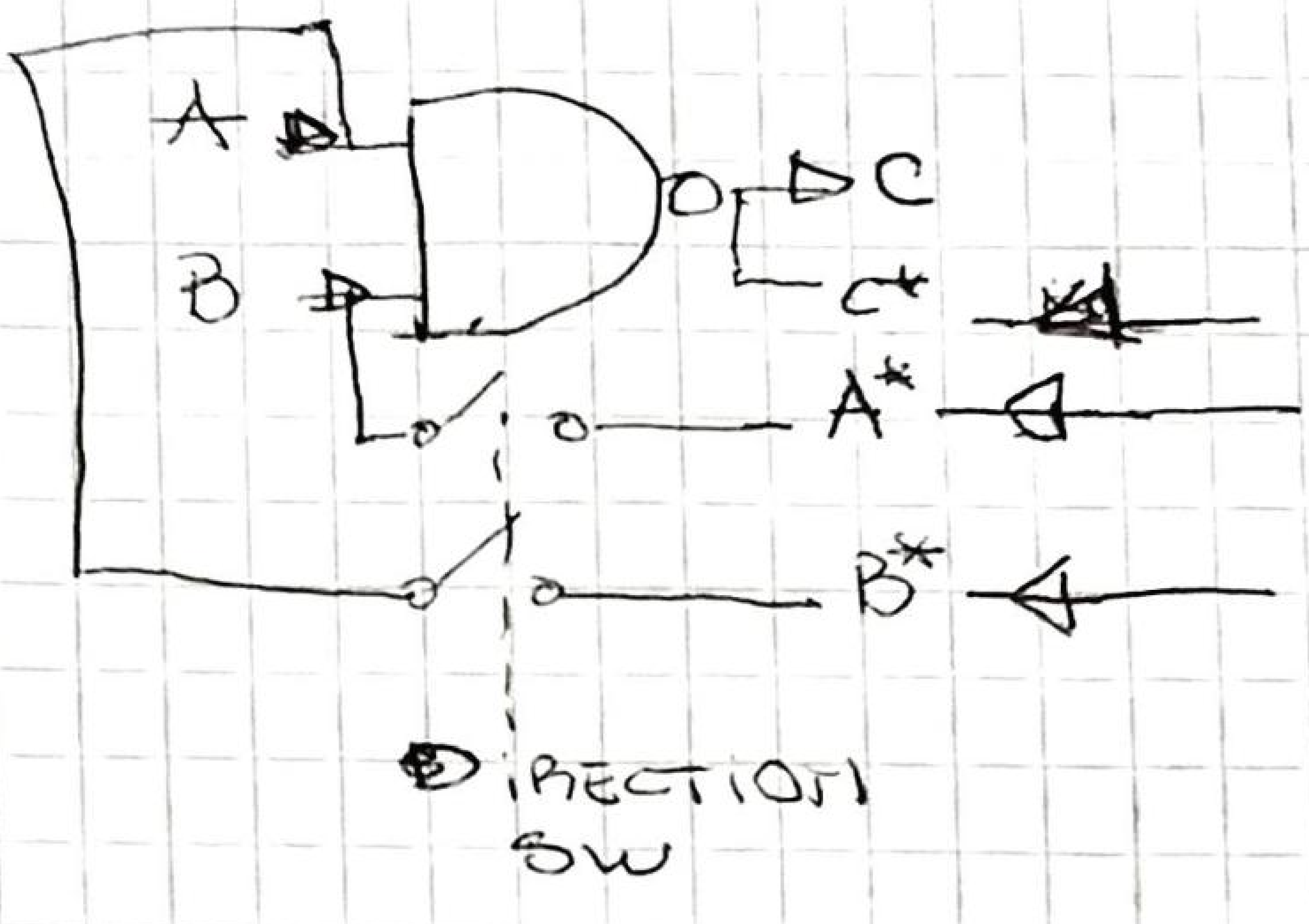
$$\boxed{P_n = \text{FLOOR}(a_n \cdot n + b_n \cdot F_n + C_n \cdot P_0) + S_n + T_n}$$

$$\boxed{\lim_{n \to \infty} b_n = 0} \qquad \boxed{b_n \propto \frac{1}{F_n}}$$

- $$\boxed{b_n = \frac{1}{F_{n}} \left[\left(d \cdot P_{n-1} - \text{FLOOR}(a_n \cdot n) + c_n P_0 \right) \right] - S_n - T_n}$$

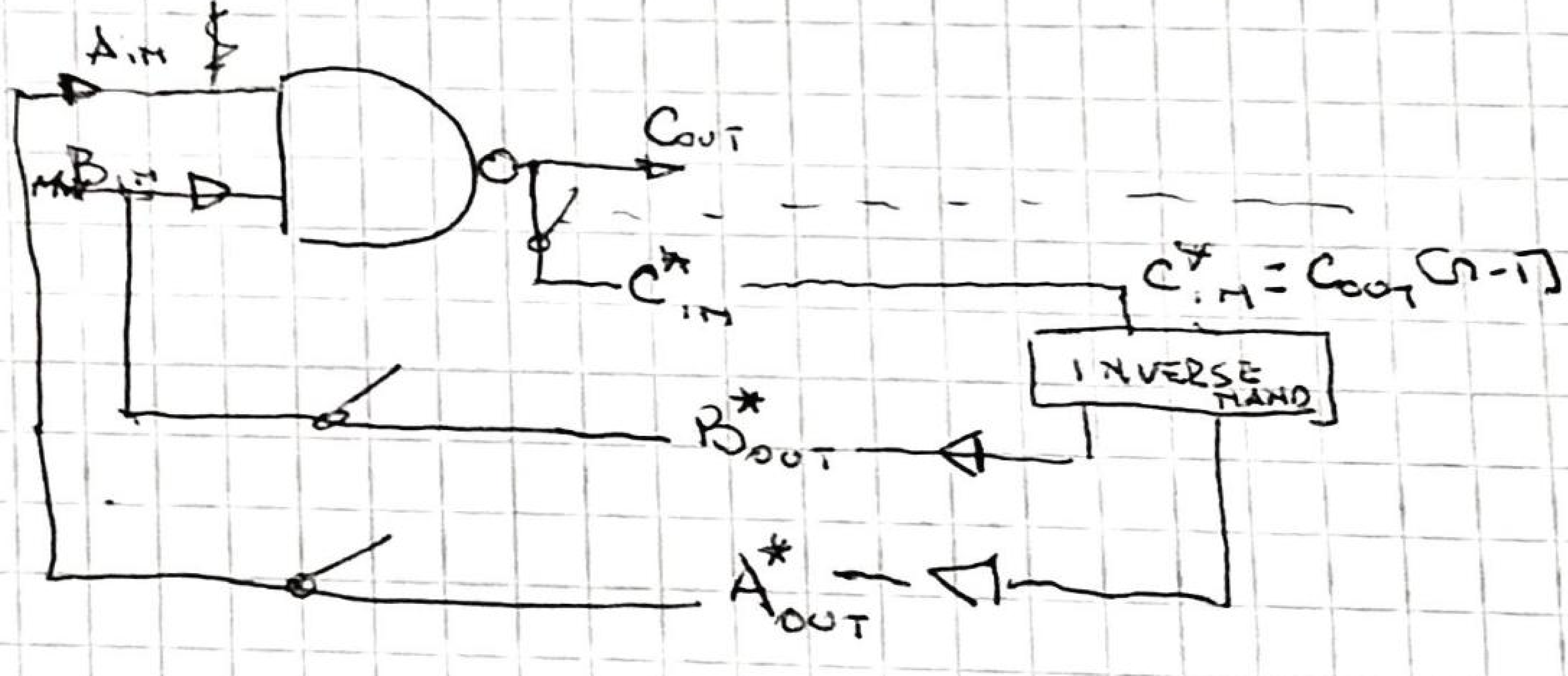
REVERSIBLE GATE

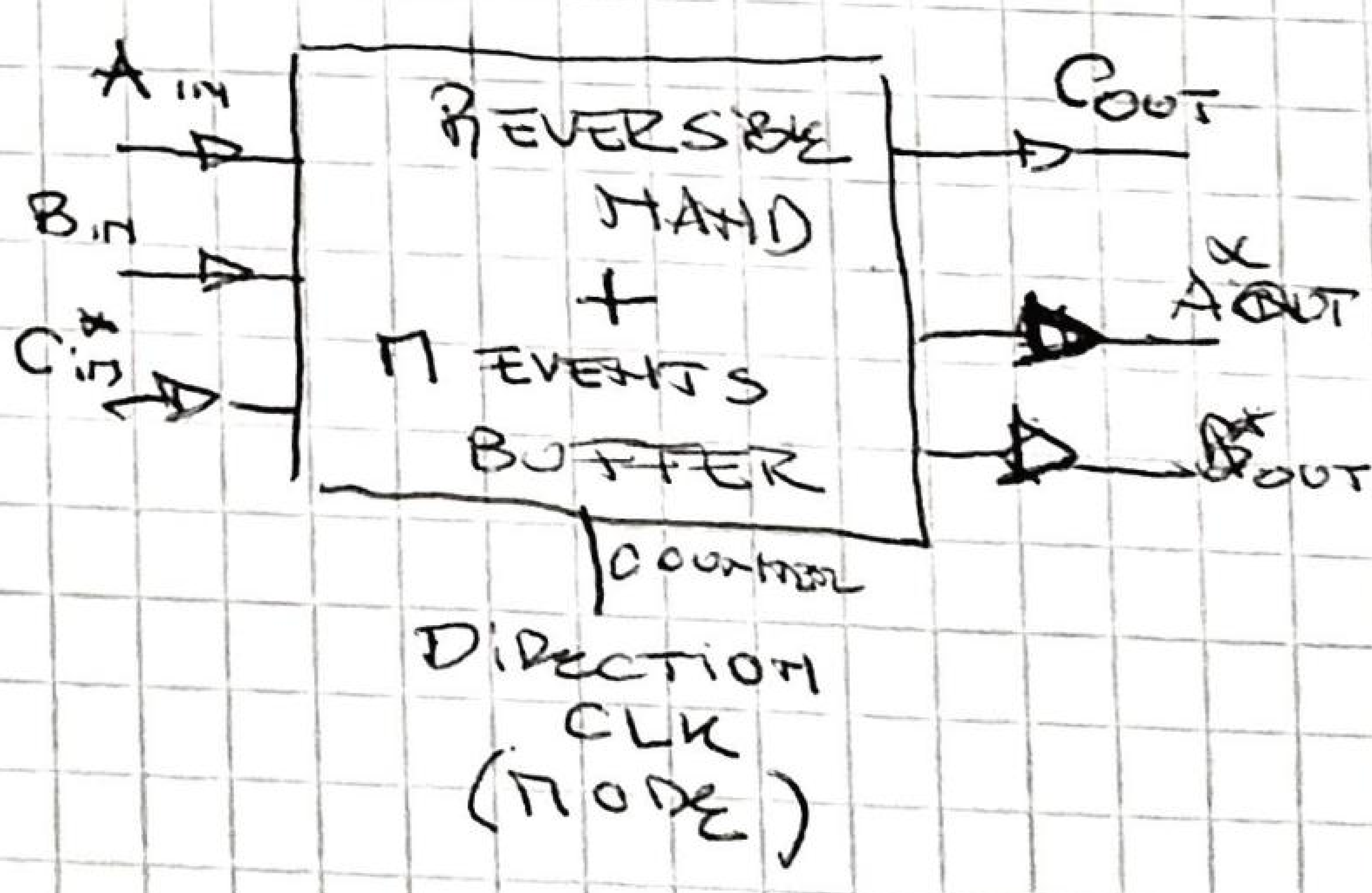
A_{in}	B	$\overline{A \cdot B}$	A_{out}	NAND C_{out}
0	0	1	0	0
0	1	1	0	1
1	0	1	1	0
1	1	0	1	1



INPUT SPACE

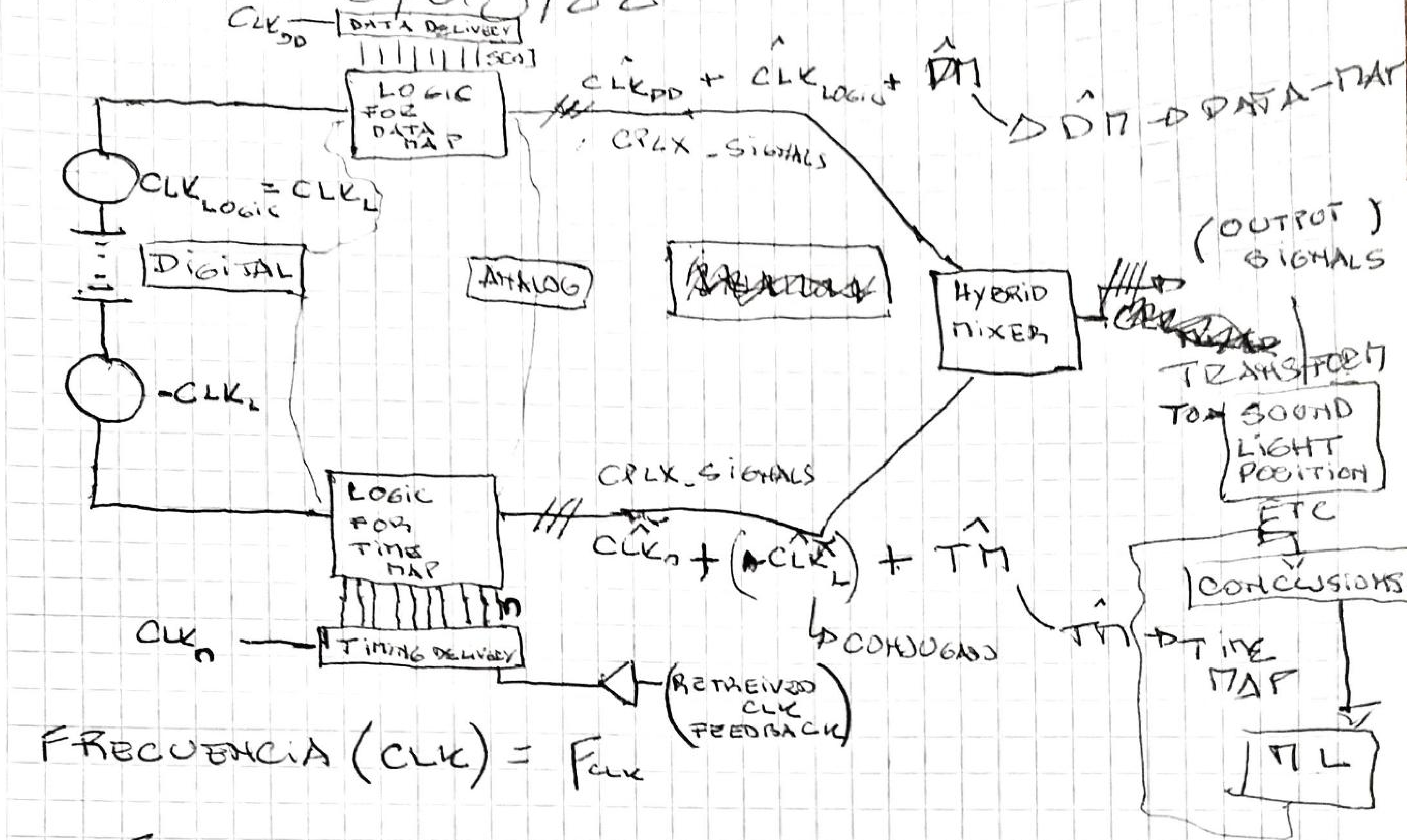
OUTPUT SPACE





A_{in} B_{in} C_{out}

SÁBADO 13/08/22



FRECUENCIA (CLK) = F_{CLK}

$$F_{CLK_D} \leq F_{CLK_n}$$

$\hat{X}_D = \hat{CLK}_{DD}[n]$

$\hat{X}_L = \hat{CLK}_L[n]$

$\hat{X}_M = \hat{DM}[n]$

$\hat{Y}_n = \hat{CLK}_n = \hat{n}[n]$

$\hat{Y}_L = -\hat{CLK}_L^*$ (CONJUGATE OF $\hat{CLK}_L$)

$\hat{Y}_M = \hat{TM} = Z\_CARRIER[n]$

HYBRID SOLVER

ANALOG + DIGITAL

$\hat{Z}_S$ (SOUND)

$\hat{Z}_C$ (COLOR)

$\hat{Z}_F$ (FREQUENCY)

$\hat{Z}_{POS_\alpha}$ (NEXT POS α)

$\hat{Z}_{POS_\beta}$ β

$\hat{Z}_{POS_\mu}$ μ

$\hat{Z}_{TIMING}$ (FIXES TIMING PROBLEMS)

RETRIEVED

NOTA

HOJA N°

FECHA

$$\Delta r = \frac{\sqrt{T_0}}{T_0} = \frac{1}{\sqrt{T_0}}$$

$S[n] \in \mathbb{N}_0$

$\Delta\_S[n] \in \mathbb{Z}_0$ VELOCIDAD

$d2\_S[n] \in \mathbb{Z}_0$ ACELERACIÓN

$d3\_S[n] \in \mathbb{Z}_0$ JERK

$$r_n = \begin{cases} \text{si } n \% T_0 = 0 \\ \quad r_n = r_{n-1} + \Delta r \\ \text{si } n \% T_0 \neq 0 \\ \quad r_n = r_{n-1} \end{cases}$$

$$\tilde{S}[n] = \underbrace{r_n e^{j\omega_t n}}_{r_n \cdot \rho_n} \cdot \left(S[n] - j S[n-1]\right) = r_n \rho_n \varphi_S$$

$$R[n] = \frac{S[n] - S[n-1]}{S[n-1]} = \frac{S[n]}{S[n-1]} - 1$$

$$\tilde{S}(n) = r_n \tilde{\rho}_n \tilde{\rho}_S$$

$$\frac{\overset{x}{S[n]} - j\overset{y}{S[n-1]}}{S_{n-1}} = \frac{\varphi_S}{S_{n-1}}$$

$$\left(\frac{S[n]}{S_{n-1}} - j\right) = \tilde{R}[n] \quad \text{COMPLEJ RENDI}$$

$$\left(\frac{x}{y} - j\right)\left(\frac{x}{y} + j\right) = \|\tilde{R}[n]\|$$

$$\left(\frac{x^2}{y^2} + 1\right)$$

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LIFE_EXP[n] (AT BIRTH)

GDP_PER_CAPITA[n]

COUNTRY[n] , COUNTRY_COLOR[n]

(S) → COVID_DEATHS[n]

POPULATION[n]

ARG_LIFE_EXP =

SERIE TEMPORAL MULTIVARIADA EN FORMA CIRCULAR COMO DISCOS EN UNA VECINDAD EN

PROP. DEL DISCO:

$$r_{t+1} = \begin{cases} r_{t-1} & si \quad t \neq 0 \ \text{mod } T_0 \\ r_{t-1} + K_1 S_1 & t = 0 \ \text{mod } T_0 \end{cases}$$

TIME_COORD_X:

TIME_COORD_Y:

$$r_t e^{j\varphi_t} = x_t + j y_t = \sqrt{x^2+y^2}\, e^{j \tan^{-1}\left(\frac{y}{x}\right)}$$

MARKER: O; +; X

COLOR: (BGR →

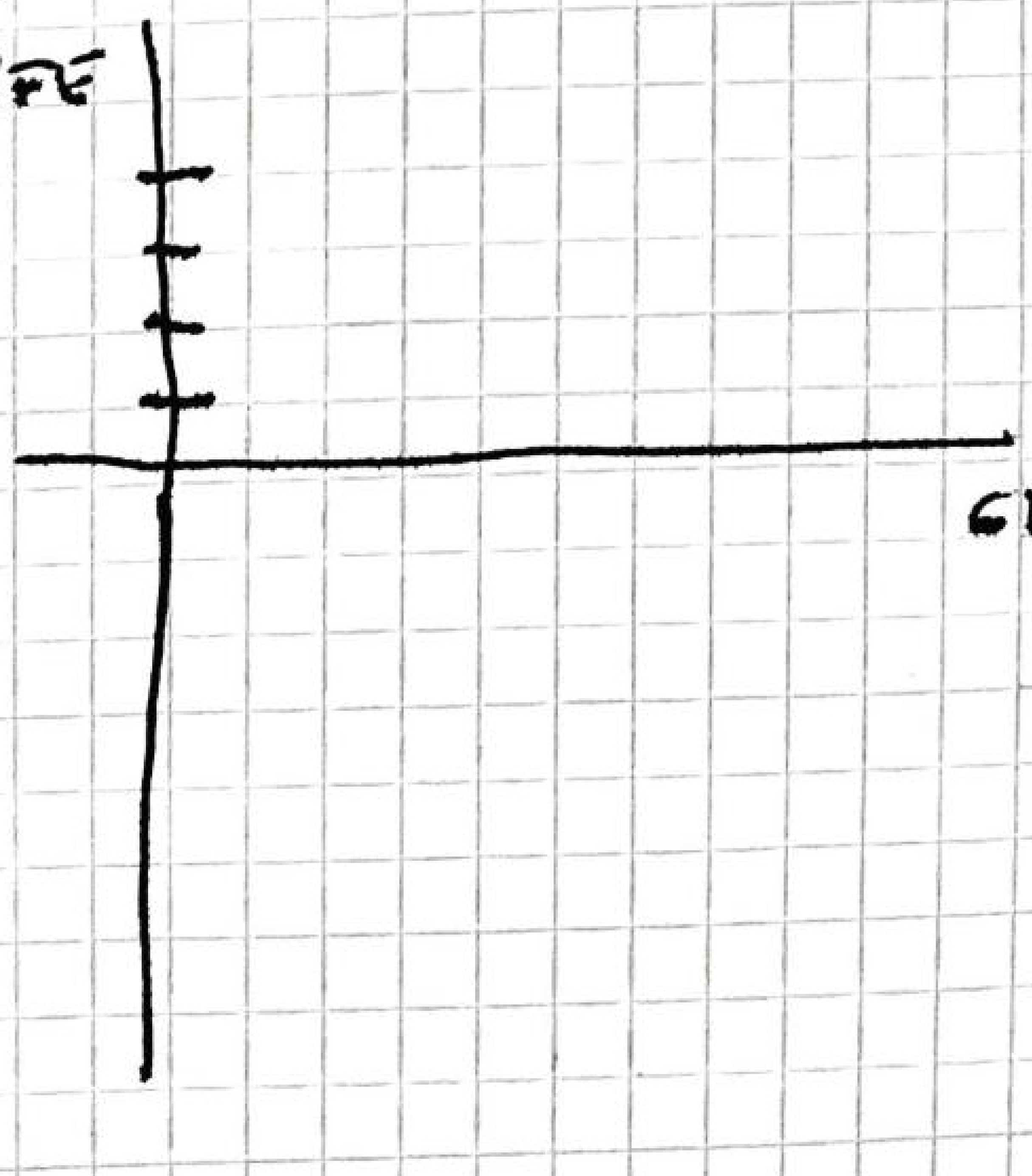
S_1 = ÁREA_DISCO → K × POPULATION

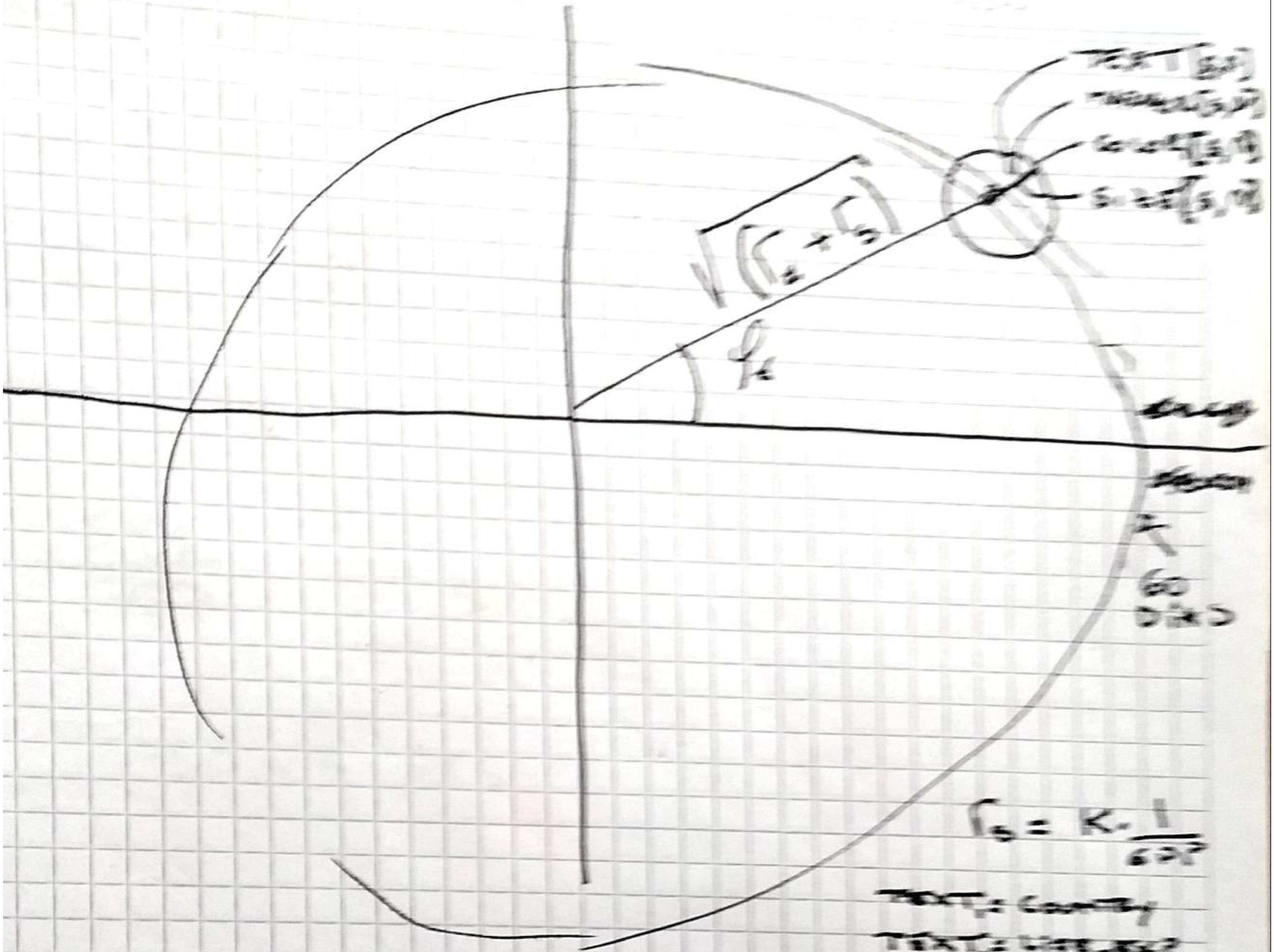
S_2 = (OTRO CMAP) → K × NEW_DEATHS

TEXTO 1 → PAIS

TEXTO 2 →

S:





$$\Gamma_s = K \cdot \frac{1}{GDP}$$

$TEXT_1$ = COUNTRY

$TEXT_2$ = [illegible]

(R) [illegible] > 0 NEW DEATHS

(G) [illegible] < 0 NEW [illegible]

COLORMAP = [illegible]

COLOR = NEW_DEATHS

K_1 = POPULATION_DENSITY

$$\Gamma_S = K_1 \cdot \frac{1}{GDP} + K_2 \cdot \frac{1}{\quad}$$

$\{1, 2, 3, 4 \cdots 2000\}$

$\{1, 2, 3, 4, 5\} \Rightarrow S_{1-5}$

$P(x) = (1+x)(1+x^2)(1+x^3)(1+x^4)(1+x^5)$

$P(x) = (1+x+x^2+x^3)(1+x^3)(1+x^4)(1+x^5)$

$P(x) = (1+x+x^2+2x^3+x^4+x^5+x^6)(1+x^4)(1+x^5)$

$P(x) = (1+x+x^2+2x^3+2x^4+2x^5+2x^6+2x^7+x^8+x^9+x^{10})(1$

$P(x) = (1+x+x^2+2x^3+2x^4+3x^5+3x^6+3x^7+3x^8+3x^9+3x^{10}+ \cdots$

$\cdots + 2x^{11} + 2x^{12} + x^{13} + x^{14} + x^{15})$

FECHA

$N = 6$

$$f(z) = c_0 z^0 + c_1 z^1 + c_2 z^2 + c_3 z^3 + c_4 z^4 + c_5 z^5$$

$$\boxed{f(z) = \sum_{k=0}^{N-1} c_k z^k}$$

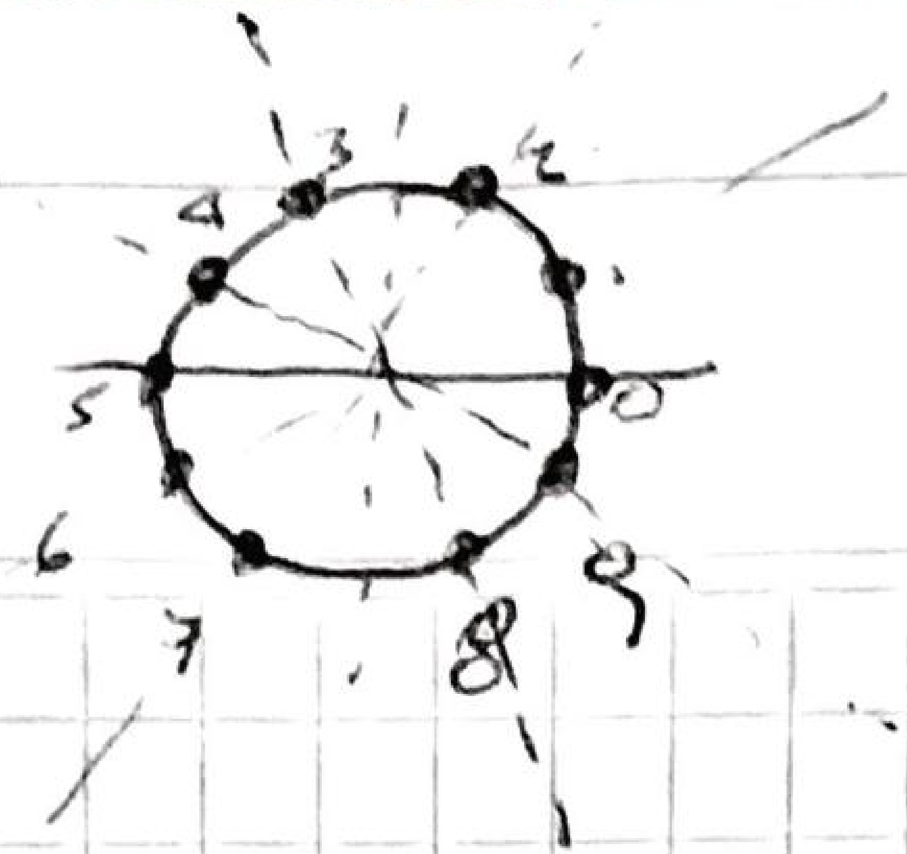
N IS SELECTED AS A HIGH AUTOCORR LAG TO

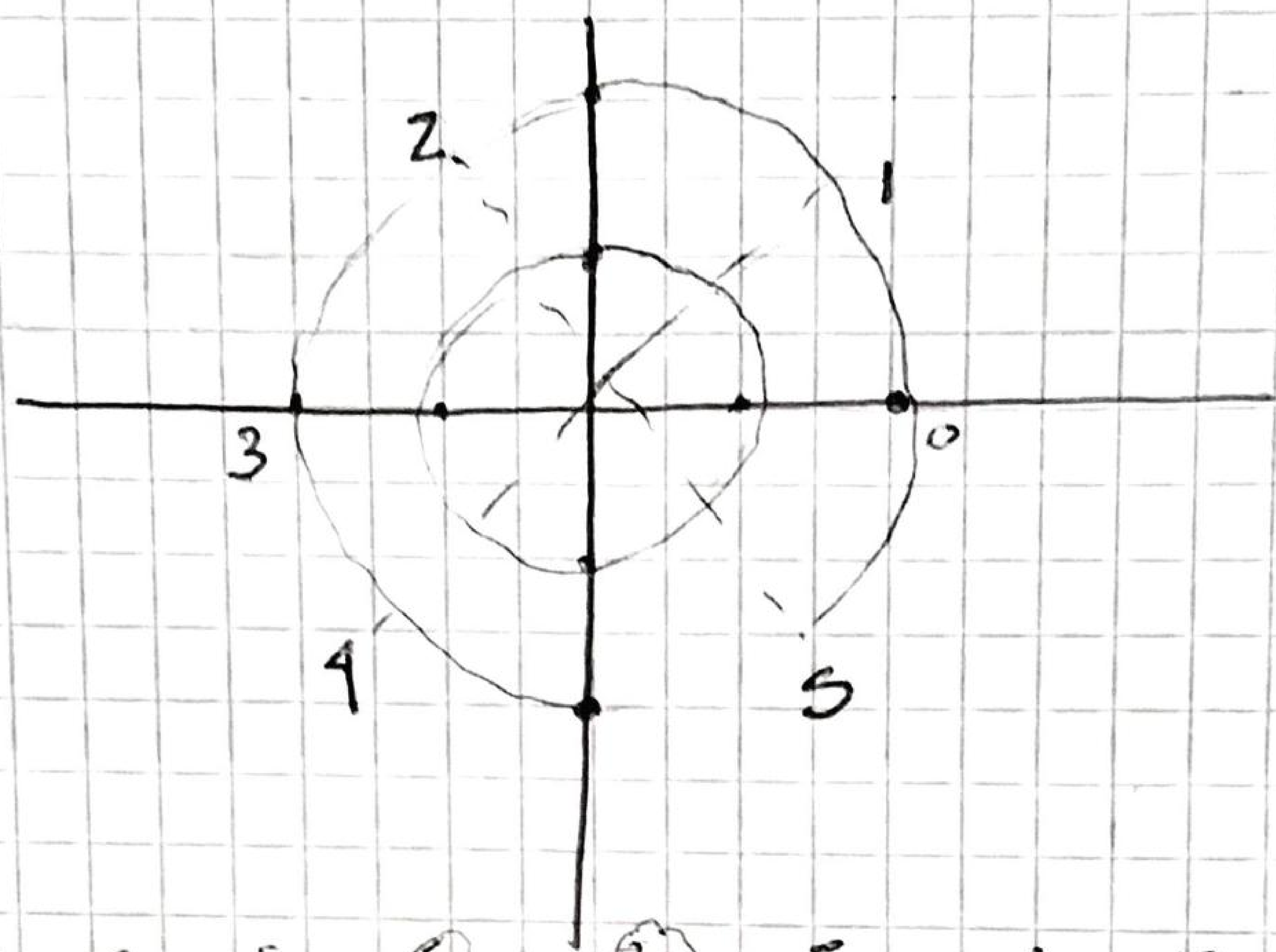
$$f(z) = (z - \rho^0)(z - \rho^1)(z - \rho^2)(z - \rho^3)(z - \rho^4)(z - \rho^5) \cdot k$$

$$f(z) = z^5$$

HOJA N°

FECHA





3, 0, 1, 4, 1, 1, 3, 1, 2, 5, 1, 4, 4

5, 3, 0, 1, 3, 3, 3, 1, 1, 3, 4, 1, 1

~~(z-Z81~~

$$(z-\zeta^5)^2(z-\zeta^0)(z-\zeta)^3(z-\zeta^4)(z-\zeta^3)(z-\zeta^2)(z-\zeta^{5})=0$$

EIGENVALUE FOR TIME

$$\Theta = e^{\frac{2\pi i}{k_0 T_0}}$$

[USING EIGENVALUES]

$n = [0, 1, 2, 3 \cdots N-1]$

SELECT $k_0, T_0, T_{CLK\phi,12}$ | T_{COLOR}, Δ_0, K_1

$$\Delta_{CLK\phi}[n] = \begin{cases} \Delta_0 & \text{IF } n = 0 \bmod T_{CLK\phi} \\ 0 & \text{IF } n > 0 \bmod T_{CLK\phi} \end{cases} = \Delta_n$$

$$\Delta_0 = \frac{1}{K_1 T_0}$$

$T_{CLK\phi}$ OPTIONS

- 2 (FOR BINARY GROUPING)
- $K \in \mathbb{N} > 0$ FOR DIFF MODS

T_{COLOR} — MOD CLASS FOR THE SYMBOL WHEEL MOD T_{COLOR}

$$\Gamma_\Theta[n] = \Gamma_\Theta[n-1] + \Delta_{CLK\phi}[n] \rightarrow \boxed{\Gamma[-1] = \phi}$$

$$\boxed{\Gamma_n = \Gamma_{n-1} + \Delta_n}$$

$$\boxed{\hat{n} = \Gamma_\Theta[n]\,\Theta^n} \longrightarrow \text{COLOR}$$

SYMBOL

$$\boxed{n \bmod T_{COLOR}}$$

MONAD (LEIBNIZ) ESSENCE

$$\boxed{\hat{n} = \Gamma_n \Theta^n}$$

$$\boxed{S[\hat{n}] = n \bmod T_{COLOR}}$$

$$S[\hat{n}] = \hat{S}_n$$

$$S[\hat{n}] = S_n$$

EIGENVALUE FOR 'SYMBOL'

$$\varphi = e^{\frac{2\pi i}{k_s \Pi_s}}$$

S_n:

- $S \in \mathbb{R}$
- $n \in \mathbb{N}_0$
- $T_S n \in \mathbb{R}$
- $\hat{n} \in \mathbb{C}$

$$\Delta_{CLK2}[S_n] = \begin{cases} \Delta_S & \text{IF } n = \phi \bmod T_{CLK2} \\ 0 & \text{IF } n > 0 \bmod T_{CLK2} \end{cases}$$

CLK2

$$\hat{S}_n \in \mathbb{C}$$

$$\Gamma_S[S] = \Gamma[S-1] + \Delta_{CLK2}$$

$\mathcal{E}[S]$

NOTA

$$\boxed{\hat{\cap}_n = \Gamma_n \Theta^n}$$

$$\boxed{\hat{\xi}_n = \Gamma_{s_n} \xi^{s_n}}$$

$$\boxed{\hat{\varphi}_n = \Gamma_n \Theta^n + \Gamma_{s_n} \xi^{s_n}}$$

TIME AND SYMBOLS
DANCE

$$\boxed{\dot{Z}_n = \frac{\hat{\xi}_n - \xi_{n-1}}{\hat{\cap}_n - \hat{\cap}_{n-1}}}$$

STRANGE
SPEED

$$\boxed{\ddot{Z}_n = \frac{\dot{Z}_n - \dot{Z}_{n-1}}{\hat{\cap}_n - \hat{\cap}_{n-1}}}$$

STRANGE
ACCELERATION

STRANGE
JERK

$$\boxed{\dddot{Z}_n = \frac{\ddot{Z}_n - \ddot{Z}_{n-1}}{\hat{\cap}_n - \hat{\cap}_{n-1}}}$$

DON'T
BE
A
$\frac{d^3x}{dt}$

POLAR SCATTER PLOT

$$\log_2^1\left(\log_2^2\left(\cdots^k\right)\right) = \mathrm{Log}_{(2,k)}$$

$$\boxed{Z_s[n] = \mathrm{Log}_{(2,k)}(n+1) \cdot \hat{\xi}^n}$$

HOJA N°

FECHA

IN GENERAL THE RECURRENCE:

$$X_n = cX_{n-1} + dX_{n-2}$$

HAS SOLUTIONS OF THE FORM:

$$X_n = a\alpha^n + b\beta^n$$

FOR SOME CONSTANTS a, b WHERE α and β

ARE THE ROOTS OF THE QUADRATIC.

$$\boxed{x^2 = cx + d}$$

---

		b_3	b_2	b_1	b_0
0	0	0	0	0	0
1	1	0	0	0	1
2	2	0	0	1	0
3	3	0	0	1	1
4	4	0	1	0	0
5	5	0	1	0	1
6	6	0	1	1	0
7	7	0	1	1	1
8	8	1	0	0	0
9	9	1	0	0	1
10	A	1	0	1	0
11	B	1	0	1	1
12	C	1	1	0	0

Ex

FOR COUNTING UP TO 13

WE NEED 4 bits $\{b_3, b_2, b_1, b_0\}$

n	b_3	b_2	b_1	b_0	S_n	S_3	b_3	b_2	b_1	b_0	T_n				Σb_i	T_3
0	0	0	0	0	0	0	0	0	0	0	ϕ	ϕ	ϕ	ϕ	0	0
1	0	0	0	1	8	5	1	0	0	0	I	ϕ	ϕ	I	2	9
2	0	0	1	0	3	10	0	0	1	1	ϕ	ϕ	ϕ	I	1	1
3	0	0	1	1	11	2	1	0	1	1	I	ϕ	ϕ	ϕ	1	8
4	0	1	0	0	6	7	0	1	1	0	ϕ	ϕ	I	ϕ	1	2
5	0	1	0	1	1	12	0	0	0	1	ϕ	I	ϕ	ϕ	1	4
6	0	1	1	0	9	4	1	0	0	1	I	I	I	I	4	15
7	0	1	1	1	4	9	0	1	0	0	ϕ	ϕ	I	I	2	3
8	1	0	0	0	12	1	1	1	0	0	ϕ	I	ϕ	ϕ	1	4
9	1	0	0	1	7	6	0	1	1	1	I	I	I	ϕ	3	14
10	1	0	1	0	12	11	0	0	1	0	I	ϕ	ϕ	ϕ	1	2
11	1	0	1	1	10	3	1	0	1	0	ϕ	ϕ	ϕ	I	1	1
12	1	1	0	0	5	8	0	1	0	1	I	ϕ	ϕ	I	2	9

$n + T_3 = S_3$

$5 + 4 = 9$

[illegible]

8

n	a	b	c	S	T	F	P
0	1	1	1	0	0	0	13
1				[illegible]	9	4	17
2				3	1	1	19
3				11	8	2	23
4				6	2	3	29
5				1	4	5	31
6				9	15	8	37
7				4	3	13	41
8				12	4	21	43
9				7	14	34	47
10				2	8	55	53
11				10	1	89	59
12				5	9	144	61

$$\boxed{Z = R + j\left(\omega L - \frac{1}{\omega C}\right)}$$

WHAT YOU SAY IS, KIDS LET'S SOLVE T

Z_1 = EQUATION

$$\omega L - \frac{1}{\omega C} = 0$$

$$\omega L = (\omega C)^{-1}$$

$$\omega L = \frac{1}{\omega C}$$

$$\omega^2 = \frac{1}{LC}$$

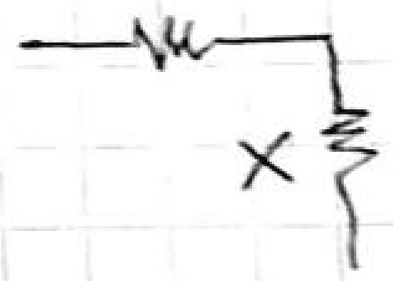
$$\omega = \frac{1}{\sqrt{LC}}$$

$$Z_{II} = R + jX = |Z| e^{j\varphi_z}$$

RECTANG   POLAR

$$|Z| = \sqrt{R^2 + X^2}$$

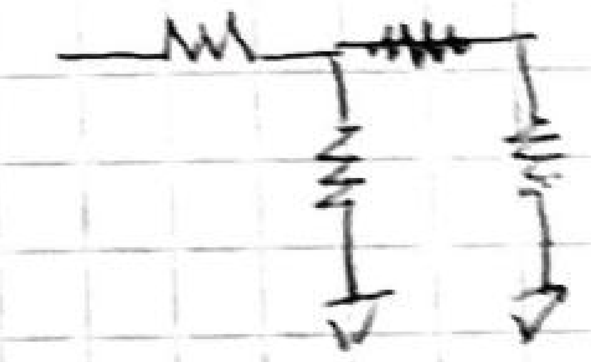
$$\varphi_z = \operatorname{arctg}\left(\frac{X}{R}\right)$$



$$Z_{III} = R + jX + j^2 Y = |Z_{III}| e^{j\varphi_z}$$

$$|Z_{III}| = \sqrt{R^2 + X^2 + Y^2}$$

$$\varphi_z = \operatorname{arctg}\left(\frac{R + XY}{Z + Y}\right)$$



Z_{IV}

$T_0 = 3$

$\xi^0, \xi^1, \xi^2, \xi^3, \ldots \xi^{\pi}$

$1,$

$1, \sqrt{-1}, \sqrt{-2}$

$e^{j2\pi}, e^{j\frac{\pi}{2}}, 2e^{j\frac{\pi}{2}2}, 3$

$e^{\frac{2\pi}{1}}, e^{\frac{2\pi}{2}}, e^{\frac{2\pi}{3}}, e^{\frac{2\pi}{4}}$

$$\left(\xi = e^{j\frac{2\pi}{T_0}}\right) \quad T_0 = 1$$

$T_0 = 2$

$\xi^0, \xi^1, \xi^2, \xi^3, \xi^4, \xi^5 \quad T_0 = 1$

$1, 1, 1, 1, 1, 1$

$\xi^0 \; \xi^1 \; \xi^2 \; \xi^3$

$1 \; -1 \; 1 \; -1$

FECHA

$\Theta = e^{j2\pi}$ $\qquad \Gamma(\Theta) = \Gamma_\theta = (\Theta)^{\frac{1}{\Gamma}}$ $\qquad F = \frac{1}{\Gamma}$

$$e^{j2\pi F} = \Theta^F$$

$$\Gamma_\theta = e^{j\frac{2\pi}{\Gamma}} =$$

DEFINAMOS FRECUENCIA DE UN DETERMINADO RATIO Γ COMO

$$\nu = \frac{1}{\Gamma} = \nu$$

SI $\Theta = e^{j2\pi}$

$$\Gamma(\Theta) = \Gamma_\theta = \Theta^\nu$$

$V = I \cdot R$

$$\phi_{dn}(x) = \frac{1}{x^2} \cdot Z_d$$

$$\phi_{op}(x) = X \cdot e^{\frac{x}{n}}$$

$$V(x) = X \cdot Z_d$$

$$I(x) =$$

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EACH SYMBOL IS A COLLECTION OF 3 CONSECUTIVE ELEMENTS
AND Δ Δ^2 Δ^3
BETWEEN THEM

$n = \{0, 1, 2, 3 \cdots N-1\}$ $S[n] = S_n$ IS A ~~[illegible]~~ MAIN SEQUENCE SAMPLE

$$S_3[n] = \begin{cases} 0 & \text{FOR } n < 3 \\ \hat{S}_n & \text{FOR } n \geq 3 \end{cases}$$

S

$$S_{III}[n] = \begin{cases} 0 & \text{FOR } n < 3 \\ \begin{pmatrix} S_{n-2}, & S_{n-1}, & S_n \\ S_x & S_y & S_z \end{pmatrix} & \text{FOR } n \geq 3 \end{cases}$$

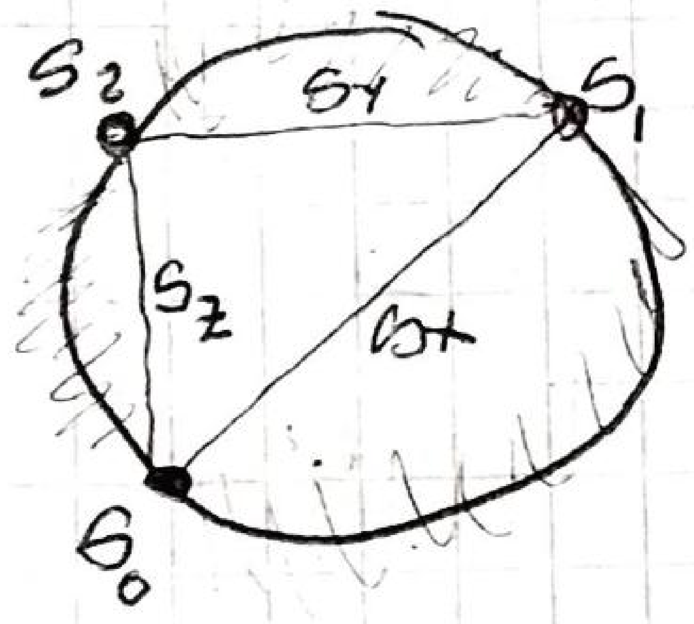
$$\hat{S}_{III}[n] = \overbrace{\frac{K_x}{S_x^2} \zeta^{S_x}}^{Z_1} \,//\, \overbrace{\frac{K_y}{S_y^2} \zeta^{S_y}}^{Z_2} \,//\, \overbrace{\frac{K_z}{S_z^2} \zeta^{S_z}}^{Z_3}$$

$$S; \left\{ \begin{bmatrix} K_x = S_x^2 \\ K_y = S_y^2 \\ K_z = S_z^2 \end{bmatrix} \right\} \rightarrow \hat{S}_{III}[n] = \zeta^{S_x} // \zeta^{S_y} // \zeta^{S_z}$$

$$= \left(\frac{\zeta^{S_x} \cdot \zeta^{S_y}}{\zeta^{S_x} + \zeta^{S_y}} \right) // \zeta^{S_z}$$

$$\frac{Z \zeta^{S_z}}{Z + \zeta^{S_z}}$$

$$= \frac{\zeta^{S_z}}{\zeta^{S_x} \zeta^{S_y}} \left(\zeta^{S_x} + \zeta^{S_y} \right)$$



0, 8, 3, 11, 6,
1, 9, 4, 12, 7
2, 10, 5

$\zeta = e^{\frac{2\pi i}{13}}$

	0	1	2
0	00	01	02
1	10	11	12
2	20	21	22

$s_x = s_1 - s_0$

$s_y = s_2 - s_1$

$s_z = s_0 - s_2$

$\hat{s}_0 = \zeta^{s_0}$ $\hat{s}_1 = \zeta^{s_1}$ $\hat{s}_2 = \zeta^{s_2}$

$\hat{s}_x = \zeta^{s_1} - \zeta^{s_0}$

$\hat{s}_y = \zeta^{s_2} - \zeta^{s_1}$

$\hat{s}_z = \zeta^{s_0} - \zeta^{s_2}$

$$\hat{\zeta}_\alpha = \frac{\hat{s}_x \hat{s}_y}{\hat{s}_x + \hat{s}_y} \qquad \hat{\zeta}_\beta = \frac{\hat{\zeta}_\alpha s_z}{\hat{\zeta}_\alpha + \hat{s}_z} \qquad \zeta = \frac{\zeta_\alpha \zeta_\beta}{\zeta_\alpha + \zeta_\beta}$$

BFLOAT 16

$b_{15}\, b_{14}\, b_{13}\, b_{12}\, b_{11}\, b_{10}\, b_9\, b_8\, b_7\, b_6\, b_5\, b_4\, b_3\, b_2\, b_1\, b_0$

P (PRECISION)

S b_{15} → SIGN (1 bit)

E $b_{14} - b_7$ → EXPONENT (8 bit)

F $b_6 - b_0$ → FRACTION (7 bit)

$\boxed{\text{MAX } 3.4 \times 10^{38}}$

B = 2 → (BASE)

$$K = \frac{S}{B^{P-1}} \cdot B^E$$

S → SIGNIFICAND
MANTISA
FRACTION
CHARACTERIS

$$K = \frac{S}{2^{P-1}} 2^E = \frac{3.1416}{2}$$

$$\hat{K} = \frac{S}{2^{P-1}} e^{i\frac{2\pi}{n_E}E}$$

$$\left(\sum_{n=0}^{P-1} b_n \cdot 2^{-n}\right) \cdot 2^E$$

FLOAT

SIGN	EXPONENT	(MANTISSA) SIGNIFICAND
0	0 0 0 0	0 0 0
b_7	b_6 b_5 b_4 b_3	b_2 b_1 b_0

(S, E, M, B)

$\boxed{S + E + M \text{ BITS LONG}}$

~~NA S + E~~

S (LENGTH OF THE SIGN FIELD, 0 or 1

E (LENGTH OF THE EXPONENT FIELD

M (LENGTH OF THE MANTISSA(SIGNIFICAN

B (EXPONENT BIAS)

$$(S, E, M, B) \longrightarrow (B, P, L, U)$$

$$B = 2$$

$$P = M + 1$$

$$L = B + 1$$

$$U = 2^S - B$$

LARGEST KNOWN PRIME

$2^{82,589,933} - 1$

IN BASE TEN HAS 24,862,048 DIGITS

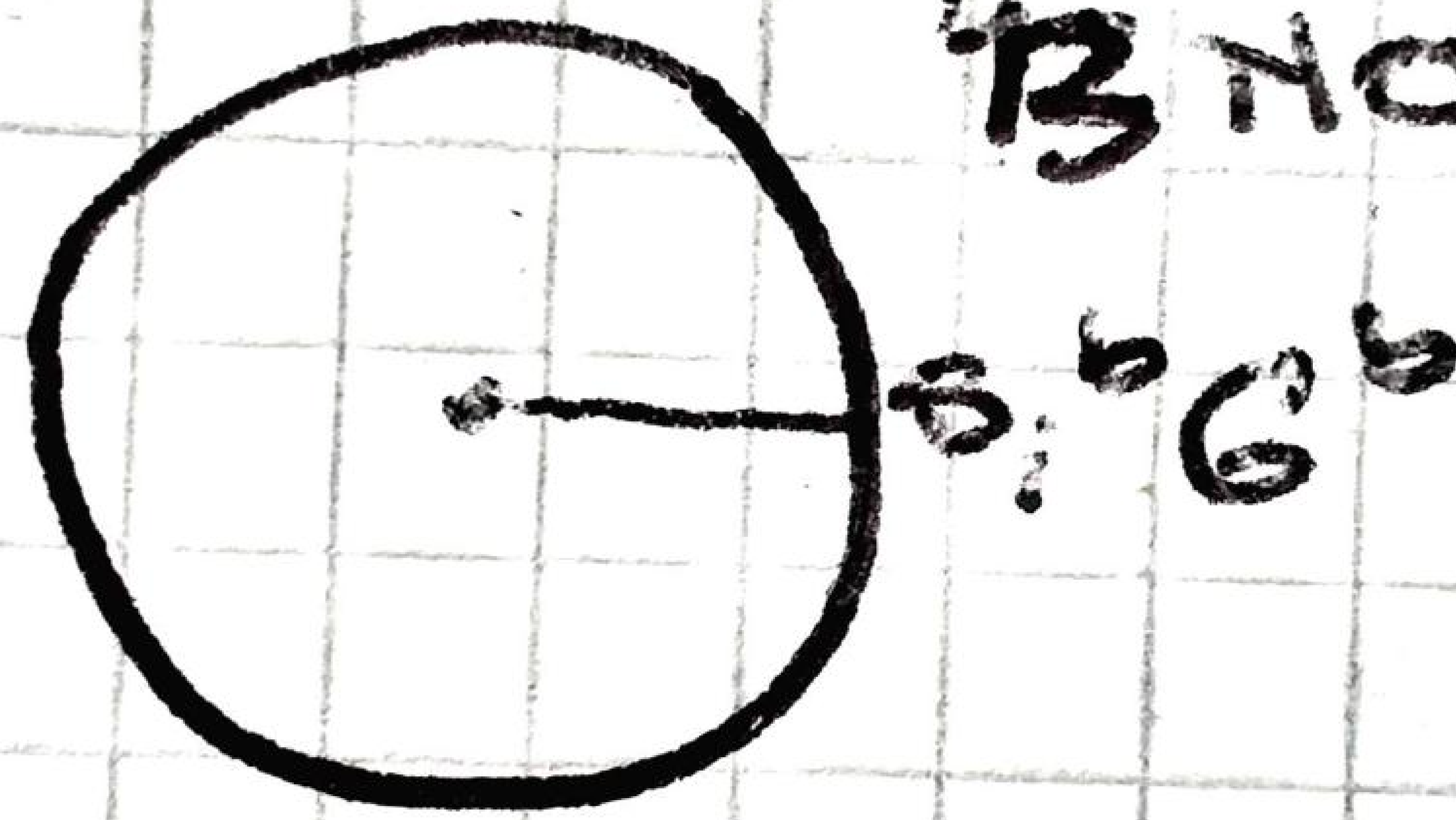
FOUND BY GIMPS

BILAH-PRIMES

$$p_n^{*} = \text{floor}(\alpha \cdot n + \beta \cdot F_n + \gamma \cdot p_{n-1}) + \overbrace{G_n + T_n}^{X_n}$$

$$p_n^{*} = \text{ceil}(\quad \text{"} \quad) \quad \text{"}$$

B NOTES



COMPUTATIONAL MODEL – "STATE MACHINE"

Q'SHARP → (GATE QC MODEL
$\downarrow$
QUANTUM COMPUTATION

QUANTUM ANNEALING MODEL ? (D-WAVE)

$$0 \begin{pmatrix} 1 \\ 0 \end{pmatrix} \qquad 1 \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

$$\begin{pmatrix} a & b \\ c & d \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} ax + by \\ cx + dy \end{pmatrix}$$

$$\begin{pmatrix} a & b & c \\ d & e & f \\ g & h & i \end{pmatrix} \begin{pmatrix} x \\ y \\ z \end{pmatrix} = \begin{pmatrix} ax + by + cz \\ dx + ey + fz \\ gx + hy + iz \end{pmatrix}$$

$$\begin{pmatrix} a & b \\ c & d \end{pmatrix} \begin{pmatrix} w & x \\ y & z \end{pmatrix} = \begin{pmatrix} aw + by & ax + bz \\ cw + dy & cx + dz \end{pmatrix}$$

$$\begin{pmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} a \\ b \\ c \\ d \end{pmatrix} = \begin{pmatrix} a \\ b \\ c \\ d \end{pmatrix} \qquad \begin{pmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} 0 \\ 1 \\ 0 \\ 0 \end{pmatrix} = \begin{pmatrix} 0 \\ 0 \\ 1 \\ 0 \end{pmatrix}$$

NOTA

HOJA N°

FECHA

- IMAGE_TO_IMAGE (VER 1482N) TIME SERIES PREDICTION

- HARMONIC DATA

~~S = {A~~

$t = nT_s \in \mathbb{R}[0, T]$

$n \in \mathbb{N}$

$T_s \in \mathbb{R}$

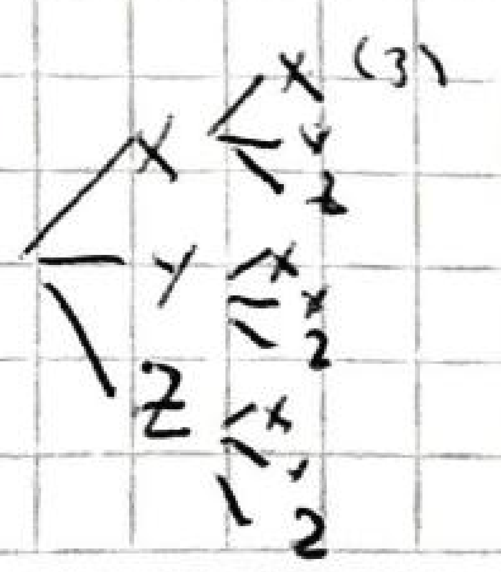
$\boxed{\begin{array}{l} T = kT_s \\ T_1 \rightarrow \text{SHORT} \\ T_2 \rightarrow \text{LONG} \end{array}}$

$$S_t = (A_1 + B_1 t)\sin(2\pi t/T_1 + \phi_1)$$
$$+$$
$$(A_2 + B_2 t)\sin(2\pi t/T_2 + \phi_2)$$

A_1 y A_2 SON MUESTRAS DE UNA DIST GAUSSIANA $N(1, 0.5)$ ($\bar{x}$, σ)

B_1, B_2 MUESTRAS DE $U\left(-\frac{1}{T}, \frac{1}{T}\right)$

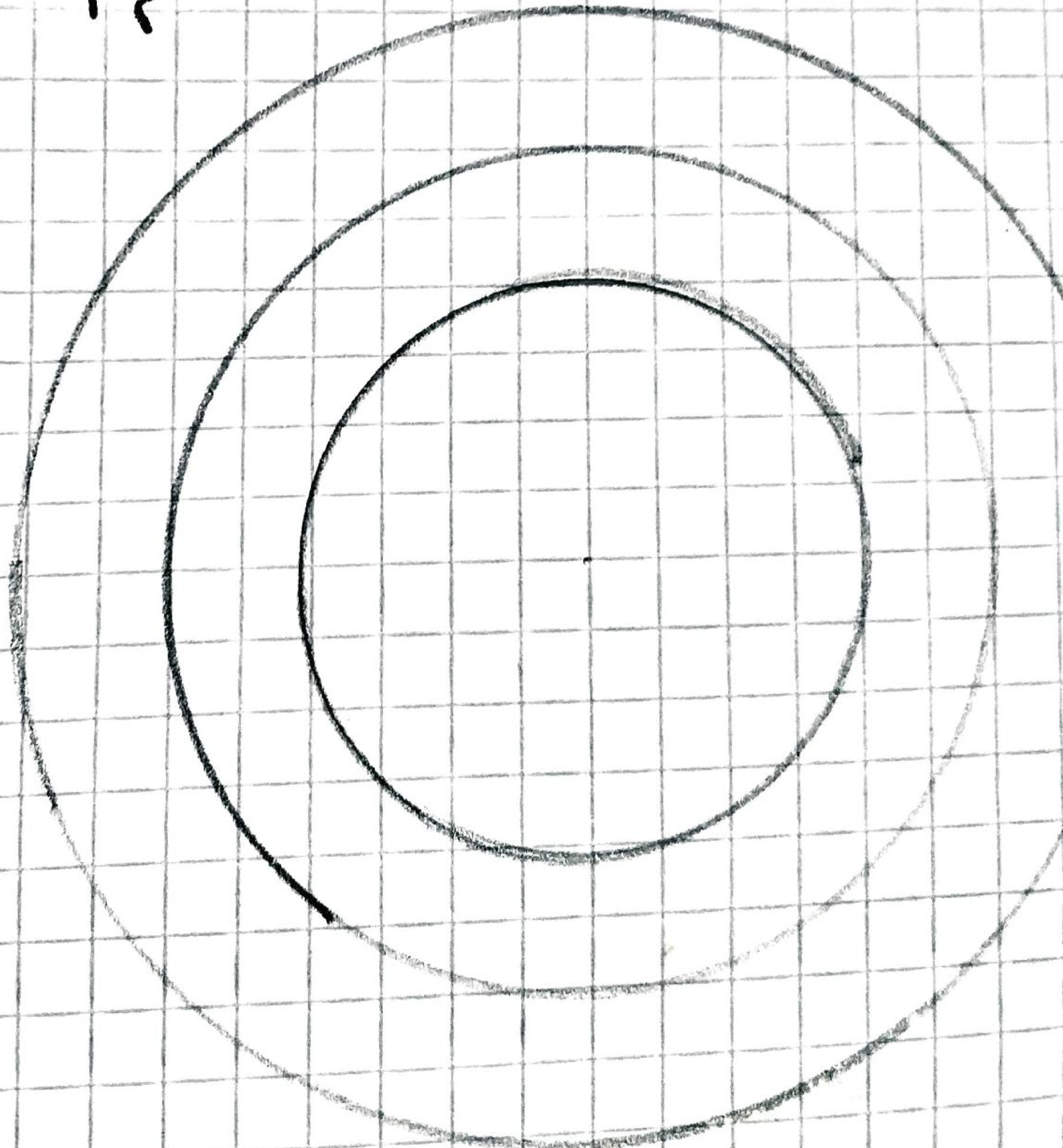
x x x



X	Y	Z
Y	Z	X
Z	X	Y

NOTA

$$\omega_r = \frac{2\pi}{T_r}$$



$$\boxed{a \oplus b = a + b}$$

$$\frac{1}{\frac{1}{x} + \frac{1}{y}} = 1 : \left(\frac{x+y}{xy}\right) = xy$$

FECHA

DEFINO $\rightarrow$ $\boxed{a \oplus b = \frac{ab}{a+b}}$

$$x \oplus y = \frac{xy}{x+y}$$

$a \oplus b = a+b$

$$\frac{xy}{x+y} = x+y$$

$$(x+y)^2 = xy$$

$$x^2 + 2xy + y^2 = xy$$

$$x^2 + xy + y^2 = 0$$

$$\frac{1}{2}\left(-b \pm \sqrt{b^2 - 4ac}\right)$$

$$x = \frac{-y \pm \sqrt{y^2 - 4y^2}}{2}$$

$$\frac{1}{2}\left(-y \pm y\left(\sqrt{1 - 4}\right)\right)$$

$$x = \frac{y}{2}\left(-1 \pm i\sqrt{3}\right)$$

$$\boxed{x = \rho_i y} \qquad \boxed{\rho_i = e^{i\pi/3}}$$

$$\boxed{a \oplus b = a - b}$$

$$\frac{xy}{x+y} = x - y$$

$$xy = x^2 - y^2$$

$$x^2 - xy - y^2 = 0$$

$$\rightarrow \quad x = \frac{1}{2}\left(y \pm \sqrt{y^2 + 4y^2}\right)$$

$$\boxed{x = y \cdot \frac{1}{2}\left(1 \pm \sqrt{5}\right)}$$

$$\boxed{x = \rho_r y}$$

DISCRETE GRID

PLOTS PYTHON

Y

MATLAB

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$$\boxed{\varphi_r = \frac{1}{2}(1+\sqrt{5})} \qquad \boxed{\hat{\varphi}_i = \frac{1}{2}(-1+j\sqrt{3})}$$

$$\xi = \frac{\varphi_r \varphi_i}{\varphi_r + \varphi_i} = \varphi_r e^{j\pi + \frac{\varsigma\pi}{3}}$$

DEFINO SECUENCIAS DE FONDO COMO PARA $n \in \mathbb{N}[1, \text{BATCH\_SIZE}]$

$$\hat{n}\_\text{index}[n] = \frac{1}{n} e^{j\omega_{index}}$$

$$n = [1; 2, 3; 4; 5 \cdots 6 \ \ \text{BATCH\_SIZE}]$$

$$n_\perp^{[n]} = \left[\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{4}{5}, \frac{5}{6}, \frac{6}{7} \right]$$

$$n_\perp[n] = \frac{n-1}{n} \qquad n \in \mathbb{N} \ \boxed{n \geq 2}$$

$$\hat{n}_\perp[n] = n_\perp[n] \cdot e^{j\frac{2\pi}{T}n}$$

$$\hat{\varphi} = \varphi_r + \hat{\varphi}_i = \cancel{\frac{1}{2}} + \frac{\sqrt{5}}{2} + \cancel{\frac{-1}{2}} + j\frac{\sqrt{3}}{2}$$

$$\hat{\varphi} = \frac{1}{2}(\sqrt{5} + j\sqrt{3})$$

$$S[n] = S[n-1] \cdot \frac{1}{X[n]} \cdot \frac{1}{\xi}$$

$n\sim$

$$X[n] = \frac{S[n-1]}{S[n]} \cdot \frac{1}{\xi}$$

$1, 2, 3, 4$

$\frac{1}{2}, \frac{3}{2}, \frac{4}{3}$

$\frac{2}{3} - \frac{1}{2}$

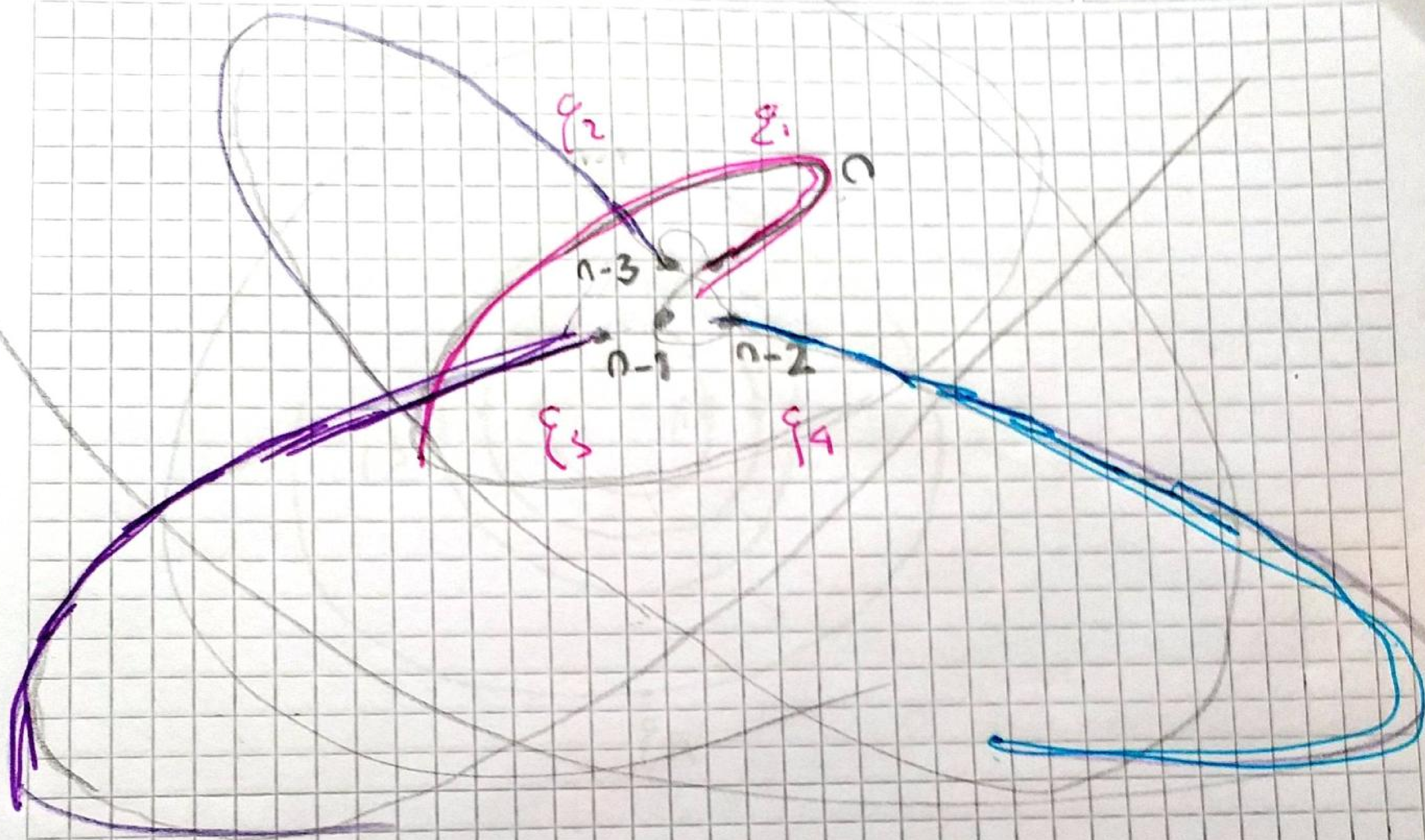
$\frac{4-3}{6} = \frac{1}{6}$

$\frac{6}{7} - \frac{5}{6} = \frac{36-35}{42} = \frac{1}{42}$

NOTA

HOJA N°

FECHA



PARA $n \geq 3$ PLOT

$\xi_1 (n)$

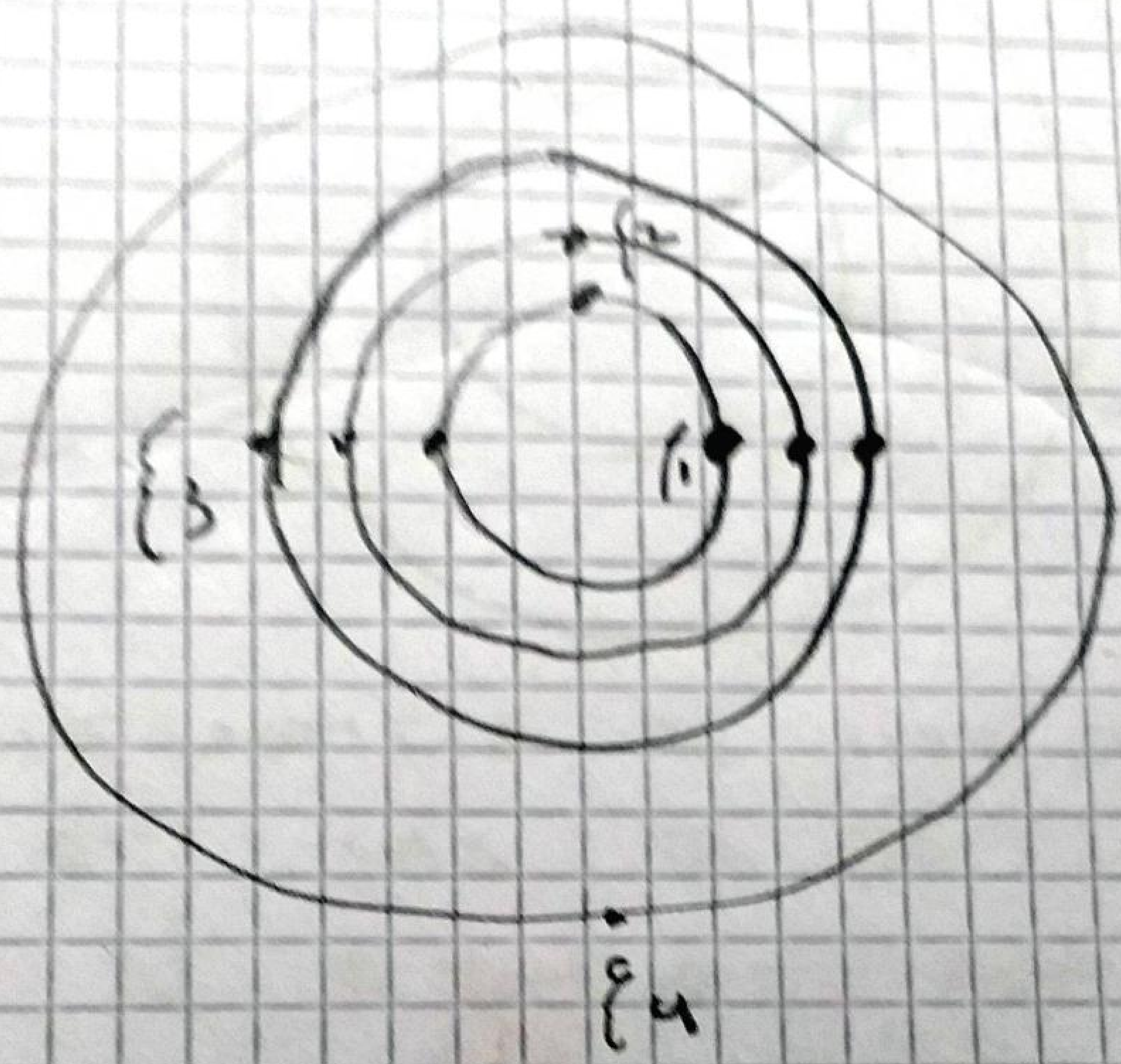
$\xi_3 (n-1)$

$\xi_4 (n-2)$

$\xi_2 (n-3)$

SIENDO EL COLOR
UN RANGO
HSV
DE
0 a $\frac{\pi}{2}$

EQUIVALENTE MÁS SENCILLO



$f_4[n-3]$

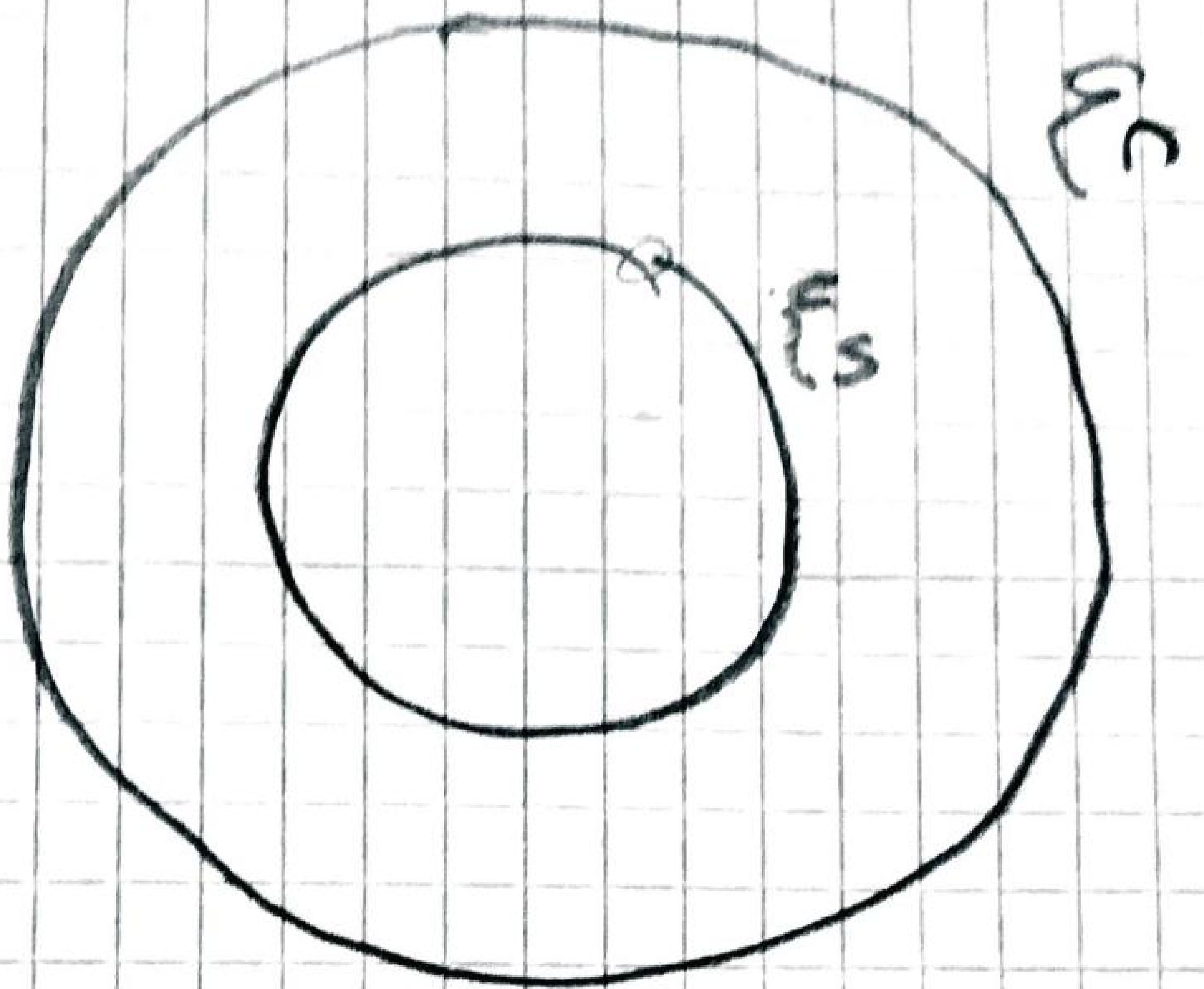
$f_3[n-2]$

$f_2[n-1]$

$f_1[n]$

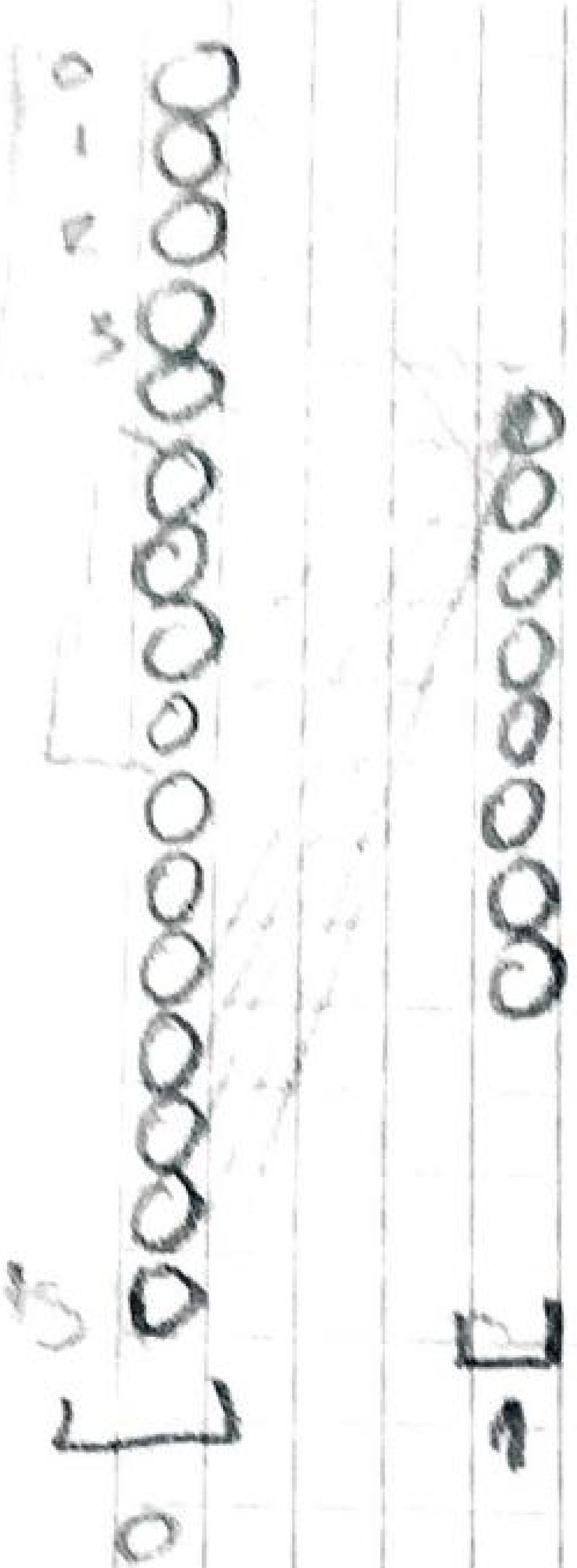
HOJA N°

FECHA



$\xi_s \rightarrow$ SECUENCIA DE IMÁGENES
EN LAS Q SE MARCAN
N EVENTOS CONSECUTIVOS
COMO FASES
EN UNA RUEDA.
INDICANDO EL
VALOR DE LA
SERIE TEMPORAL

IMAGEN
16 pixeles



8 neuronas

$$\sigma\left(W a^{(0)} + b\right) = a^{(1)}$$

k cant p...
n cant neuron...

$$W = \begin{bmatrix} w_{0,0} & w_{0,1} & \cdots & w_{0,n} \\ w_{1,0} & & & \\ w_{2,0} & & & \\ \vdots & & & \\ w_{k,0} & \cdots & \cdots & w_{k,n} \end{bmatrix}$$

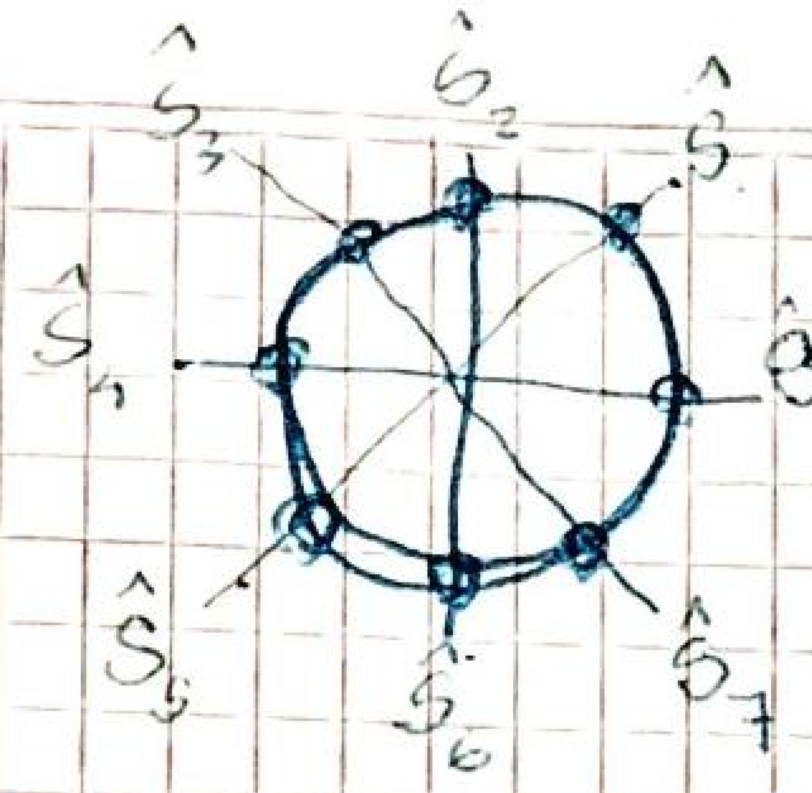
$$a^{(0)} = \begin{bmatrix} a_0^{(0)} \\ a_1^{(0)} \\ a_2^{(0)} \\ \vdots \\ a_n^{(0)} \end{bmatrix} \qquad b = \begin{bmatrix} b_0 \\ b_1 \\ \vdots \\ b_n \end{bmatrix}$$

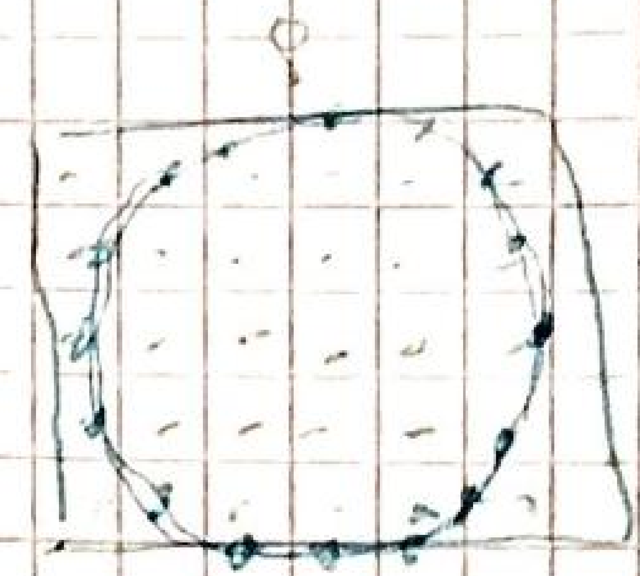
$$a^{(n)} = \sigma\left(W a^{(n-1)} + b\right)$$

NOTA

HOJA N°

FECHA





$$\hat P(z) = (z-\hat s_0)(z-\hat s_1)(z-\hat s_2)(z-\hat s_3)(z-\hat s_4)(z-\hat s_5)(z-s_6)(z-s_7)$$

NEWTON-RAPHSON

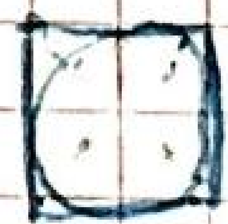
$n=8$

$$z_{n+1} = z_n - \frac{P(z_n)}{P'(z_n)}$$

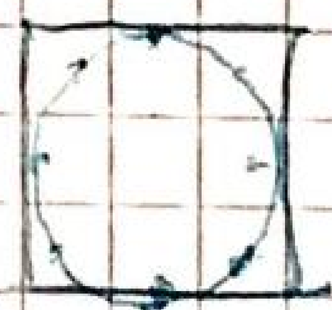
$\cancel{z_0 = \hat s_0 + 2}$

$$z_0 = \hat s_0 + \frac{1}{n}$$

$$z_n = z_{n-1} - \frac{P(z_{n-1})}{P'(z_{n-1})}$$



$2^2 = 4$



$3^2 = 9$

$$\frac{P(z_{n-1})}{P'(z_{n-1})} = z_{n-1} - z_n$$

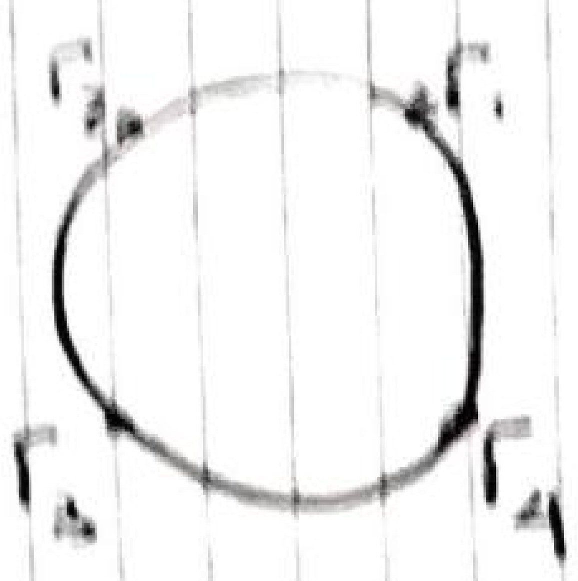
$$P'(z_{n-1}) = \frac{P(z_{n-1})}{z_{n-1} - z_n}$$

n	S	z	P

NOTA

Newton Raphson [illegible] case

$n = 4$



$(z - r_1)(z - r_2)(z - r_3)(z - r_4)$

$z^4 + a z^3 + b z^2 + c z + d = P(z)$

$$\boxed{z_{n+1} = z_n - \frac{P(z_n)}{P'(z_n)}}$$

$z_1 = \frac{1}{n} r_1$

[Newton Raphson guess $z_{NR}[n]$]

$z_1 = \frac{1}{n} \hat{S}_1$

$z_n = \frac{1}{n} \hat{S}_n$

$\hat{S}_n$

[DINAMICAS HOLOMÓRFICAS]

FECHA

Si:

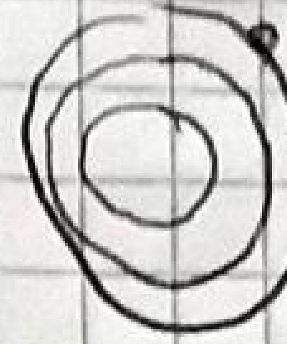
$$H(n) = \sum_{k=1}^{n} \frac{1}{k} \quad \text{con } k \in \mathbb{N}$$

↳ Serie armónica

Se verifica q:

$$\boxed{H(n) = H(n-1) + \frac{1}{n}}$$

Sea ~~[illegible]~~ $\hat{S}[n]$ con



Punto en el Atlas

$$\boxed{\hat{Z}[n] = \sum_{k=1}^{n} \frac{1}{\hat{S}[k]}}$$

$$\hat{Z}[n] = \hat{Z}[n-1] + \frac{1}{\hat{S}[n]}$$

$$\frac{1}{\hat{S}[n]} = \hat{Z}[n] - \hat{Z}[n-1]$$

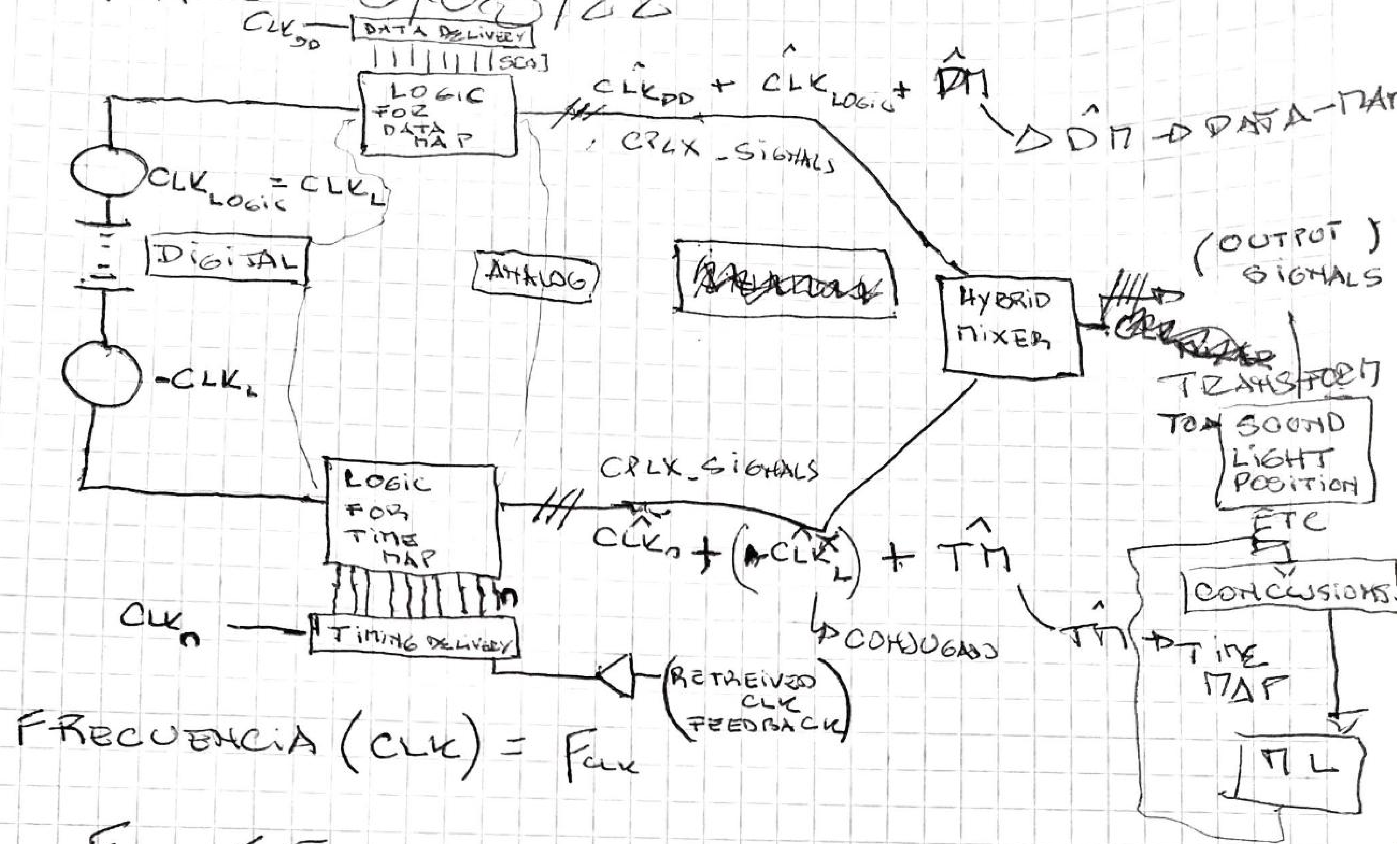
$$\hat{S}_{NEXT}[n] = \frac{1}{\hat{Z}_{AVG}[n] - \hat{Z}[n]}$$

$$\boxed{Z_{AVG}[n] = \frac{\sum_{k=1}^{n} Z[k]}{n}}$$

$$\hat{S}_{ERROR}[n] = \hat{S}[n] - \hat{S}_{NEXT}[n-1]$$

NOTA

SÁBADO 13/08/22



FRECUENCIA (CLK) = F_{CLK}

$$F_{CLK_D} \leq F_{CLK_n}$$

$\hat{X}_D = \hat{CLK}_{DD}[n]$

$\hat{X}_L = \hat{CLK}_L[n]$

$\hat{X}_M = \hat{DM}[n]$

$\hat{Y}_n = \hat{CLK}_n = \hat{n}[n]$

$\hat{Y}_L = \hat{CLK}^*_L$ (CONJUGATE OF $\hat{CLK}_L$)

$\hat{Y}_M = \hat{TM} = Z\_CARRIER[n]$

HYBRID SOLVER — ANALOG + DIGITAL

$\hat{Z}_S$ (SOUND)

$\hat{Z}_C$ (COLOR)

$\hat{Z}_F$ (FREQUENCY)

$\hat{Z}_{POS_\alpha}$ (NEXT POS α)

$\hat{Z}_{POS_\beta}$ β

$\hat{Z}_{POS_\gamma}$ γ

$\hat{Z}_{TIMING}$ (FIXES TIMING PROBLEMS) RETRIEVED