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Problem 1:

TAller #7

$$\chi_{[K+4]} = \begin{pmatrix} 2 & 1 \\ 0 & 2 \end{pmatrix} \begin{pmatrix} \chi_{1}_{[K]} \\ \chi_{2}_{[K]} \end{pmatrix}$$

$$A[K] = \begin{pmatrix} 2, 4 \\ 0 2 \end{pmatrix} \quad \phi [C_0, 0] = I$$

$$\Phi[1] = \begin{pmatrix} 2 & 1 \\ 0 & 2 \end{pmatrix} \mathbf{I} = \begin{pmatrix} 2 & 1 \\ 0 & 2 \end{pmatrix}$$

$$\Phi [2/0] = \begin{pmatrix} 2 & 1 \\ 0 & 2 \end{pmatrix} \begin{pmatrix} 2 & 4 \\ 0 & 2 \end{pmatrix} = \begin{pmatrix} 4 & 4 \\ 0 & 4 \end{pmatrix}$$

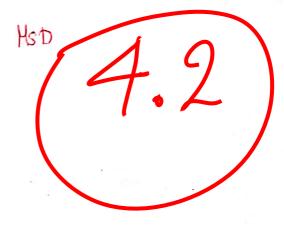
$$\overline{\mathcal{I}}[3,0] = \begin{pmatrix} 21\\02 \end{pmatrix} \begin{pmatrix} 44\\04 \end{pmatrix} = \begin{pmatrix} 812\\08 \end{pmatrix}$$

$$\phi [4]0] = \begin{pmatrix} 21 \\ 02 \end{pmatrix} \begin{pmatrix} 812 \\ 08 \end{pmatrix} = \begin{pmatrix} 16 & 32 \\ 0 & 16 \end{pmatrix}$$

$$LoTGE410] = \begin{pmatrix} 2110 \\ 02 \end{pmatrix} \begin{pmatrix} 16 & 32 \\ 0 & 16 \end{pmatrix} = \begin{pmatrix} 32 & 80 \\ 0 & 32 \end{pmatrix}$$

3/Encontramos su portrono

$$\Phi [K_{0}] = \begin{pmatrix} 2^{K} 2^{K'}(K) \\ 0 2^{K} \end{pmatrix}$$



Problema: 2:

$$X_1 EK+13 = 1X_1 EK+1 + CK+1)X_2 EK+1$$
 $X_2 EK+13 = X_2 EK3)$

dueg 0

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$$\mathcal{K}[1] = \begin{pmatrix} A + B \\ B \end{pmatrix}$$

•
$$\chi[2] = \begin{pmatrix} (A+B)+(2)B \\ B \end{pmatrix} = \begin{pmatrix} A+3B \\ B \end{pmatrix}$$

$$\cdot \chi_3 = \left(\begin{array}{c} (4438) + (3)8 \\ B \end{array} \right) = \left(\begin{array}{c} 4468 \\ B \end{array} \right)$$

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$$\chi_{4}$$
 [4] = $(A + 6B) + 4B$ = $(A + 10B)$

$$XEKIJ = \begin{pmatrix} A + ZKB \end{pmatrix} = \begin{pmatrix} A + KCKH & B \end{pmatrix}$$

$$X [K] = \begin{pmatrix} A \\ B \end{pmatrix} + \begin{pmatrix} \frac{KCM+1}{2} & B \\ 0 \end{pmatrix}$$

$$XEKJ = \begin{pmatrix} 0 \\ 1 \end{pmatrix} + \begin{pmatrix} \kappa_{\underline{CKHJ}} \\ 2 \\ 0 \end{pmatrix}$$

$$\Rightarrow 5011: \left(\frac{K(K+1)}{2}\right)$$

$$\Phi[K] = \begin{pmatrix} K(K+1) & (16) \\ 16 & 1 \end{pmatrix} \begin{pmatrix} \ell(k) & -1 \\ 2 & 1 \end{pmatrix} \qquad 50 \qquad 2 \qquad 1$$

$$\frac{1}{2} \begin{bmatrix} K_{11} = \begin{pmatrix} K_{11} \\ 2 \end{pmatrix} & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} \frac{a}{\ell^{2}+\ell} & 0 \\ 0 & 1 \end{pmatrix}$$

$$= \begin{pmatrix} \frac{K(K+1)}{L(L+1)} & 0 \\ 0 & 1 \end{pmatrix}$$

3. En este Caso las condiciones iniciales son

$$X_1 = 1 = A$$

 $X_2 = 0 = B$

Pero notemo que de antes

$$XESJ = \begin{pmatrix} A+1SB \\ B \end{pmatrix} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

Problema 3:

X [K+1] = AXCK]

Saberros que P[1(,0) es una matriz Fundamental dungo

$$X[K] = \begin{pmatrix} 1 & K & \frac{K^{4}h}{2} \\ 0 & 4 & K \\ 0 & 0 & 1 \end{pmatrix}$$

Recordemos la propiedod / I [H1] = A X [K,0]

TOTAL POTEST + MOENT DENILOS DEKIOJI

Como D[Ko] Son L.I es una matire invertible

Calcularco @cxjo] Computacional rek:

Athory terens

$$7\% \text{ GEK+4,00 PEM,0] = } \begin{pmatrix} 1 & \text{K+1} & \text{K}^{2} + 3 + 2 \\ 0 & 1 & \text{K+1} \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} 1 & -\text{K} & \frac{\text{K}^{2} - \text{K}}{2} \\ 0 - \text{M} & -\text{K} \\ 0 & 0 & 1 \end{pmatrix}$$