

Seminar 2

Polinom caracteristic. Th. H-C. Th. Laplace.

1 a)
$$A = \begin{pmatrix} 1 & 1 & 0 \\ 0 & 0 & 1 \\ 0 & 1 & 1 \end{pmatrix}$$

$$A^{-1} = ?$$

V1= TrcA1= 2

Tm= det(A)= | 11 |= -1

$$A^{-1} = -\begin{pmatrix} 0 & 1 & 1 \\ 0 & 0 & 2 \\ 0 & 0 & 2 \end{pmatrix} + 2 \begin{pmatrix} 0 & 0 & 1 \\ 0 & 0 & 1 \\ 0 & 1 & 1 \end{pmatrix} = \begin{pmatrix} 1 & 1 & -1 \\ 0 & -1 & 1 \\ 0 & 1 & 0 \end{pmatrix}$$

a) polinomicaracteristic b) A¹⁰⁰ (Th. H-C)

$$V_1 = \text{TrcA} = 0$$

$$V_2 = \begin{bmatrix} 0 & 1 \\ -1 & 2 \end{bmatrix} + \begin{bmatrix} 0 & 0 \\ -1 & 2 \end{bmatrix} + \begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix} + \begin{bmatrix} 2 & 0 \\ 0 & -2 \end{bmatrix} + \begin{bmatrix} 2 & 0 \\ -1 & 0 \end{bmatrix} + \begin{bmatrix} -2 & 1 \\ -1 & 0 \end{bmatrix} = 1 + 1 + 0 - 4 + 1 + 1 = 0$$

Fn=0

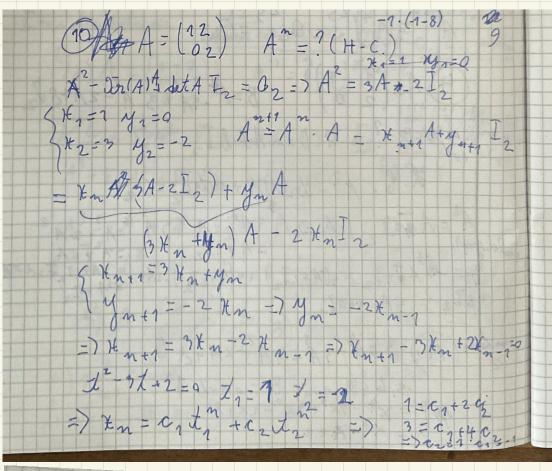
My aber, a.s. B=aA+bI2

$$A^{2} = A - \hat{L}_{2}^{2} = A^{\frac{3}{2}} A^{\frac{3}{2}} A^{\frac{3}{2}} = A^{\frac{1}{2}} = A^{\frac{1}{2}} = A^{\frac{3}{2}} = A^{\frac{$$

B = -3A+2[2 -3(-A-2[2)+3(A-2[2)-2A+8[2=A+10[2

= 3.4 -6 +1h +150 -19.8 -9=

= 6+14+150-152-9= 20-2-9=9



 $A^{n} = (-1 + 2^{n})A + (2 - 2^{n}) + 2$ $y_{n} = -2(-1 + 2^{n})$

11. $X^{2024} = A = \begin{pmatrix} 2 & -4 \\ 1 & 2 \end{pmatrix}$ a) $X \in M_2(\mathbb{R})$, x = ?b) $X \in M_2(\mathbb{C})$, $uv \cdot de \neq 0$?

a) det(A) = 0 = 0 det(X) = 0C-H $X^2 - Tv(X) \cdot X = 02 \cdot (e^{-1}) \cdot X^2 = Tv(X) \cdot X$ $= 02 \cdot (e^{-1}) \cdot X^2 = Tv(X) \cdot X = 02 \cdot (e^{-1}) \cdot X^2 = Tv(X) \cdot X$ $= 02 \cdot (e^{-1}) \cdot X^2 = Tv(X) \cdot X = 02 \cdot (e^{-1}) \cdot X^2 = Tv(X) \cdot X$ $= 02 \cdot (e^{-1}) \cdot X^2 = Tv(X) \cdot X = 02 \cdot (e^{-1}) \cdot X^2 = Tv(X) \cdot X$ $= 02 \cdot (e^{-1}) \cdot X^2 = Tv(X) \cdot X = 02 \cdot (e^{-1}) \cdot X = 0$

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

analog $y = \cos \beta$ $Z = \cos C$ => $x, y, z \in (-1, 1)$ Asp $\left(a^2 + b^2 + c^2 - 2b \cos A\right)$ Dilagora

$$\begin{cases} y_1 & y_2 & w_1 = f \\ 2x - y_2 & w_1 = f \\ y_1 & w_2 & y_1 = f \\ y_2 & y_3 & y_4 = f \\ y_3 & y_4 & y_4 = f \\ y_4 & y_5 & y_5 & y_5 & y_6 \\ y_5 & y_6 &$$