AN $n \times n$ MATRIX IS STRICTLY DIAGONAL IF

$$\sum_{j=1,\ j \neq i}^{n} |a_{ij}| < |a_{ii}|$$

SO, EA DIAGONAL ENTRY IS NONZERO

SHOW THE JACOBI ITERATION MATRIX SATISFIES,

$$\| B_J \|_\infty < 1$$

SO, ~~A~~ JACOBIAN ITERATION CONVERGE IN THIS CASE

IF $\| B_J \|_\infty = 1$

$$B_J \doteq \begin{bmatrix} 1 & 0 & 0 & \cdots \\ \vdots & \ddots & & \\ \vdots & & \ddots & \\ & & & \sim \end{bmatrix}$$

→ FIND B_J

$A = L + D + U$

$$L = \begin{bmatrix} 0 & & \emptyset \\ a_{21} & \ddots & \\ \vdots & \ddots & \\ a_{n1} & \cdots\ a_{n,n-1} & 0 \end{bmatrix}; \quad U = \begin{bmatrix} 0 & a_{12} & \cdots & a_{1n} \\ & \ddots & & \vdots \\ \emptyset & & & a_{n-1,n} \\ & & & 0 \end{bmatrix}$$

$$B_J = -D^{-1}(L + U)$$

$$D = \begin{bmatrix} a_{11} & & \emptyset \\ & \ddots & \\ \emptyset & & a_{nn} \end{bmatrix}$$

$$D^{-1} = \begin{bmatrix} \frac{1}{a_{11}} & & \emptyset \\ & \ddots & \\ \emptyset & & \frac{1}{a_{nn}} \end{bmatrix}$$

1. ATTEMPT HW PROBS
2. DRAFT YOUR PROG., SUBMIT
   i. SKYPE IF NECESSARY