

6 FIND $\|A\|_{\infty}$

7 $\|A^{-1}\|_{\infty}$

$\text{COND}_{\infty}(A)$

$$A = \begin{bmatrix} 1.2969 & 0.8648 \\ 0.2161 & 0.1441 \end{bmatrix}$$

$$A^{-1} = (\text{DETA})^{-1} \begin{bmatrix} 0.1441 & -0.8648 \\ -0.2161 & 1.2969 \end{bmatrix}$$

$$= \frac{1}{1.2969 \cdot 0.1441 - 0.8648 \cdot 0.2161} \cdot \begin{bmatrix} 0.1441 & -0.8648 \\ -0.2161 & 1.2969 \end{bmatrix}$$

IN PYTHON I HAVE STORED

$$A^{-1} = A_{\text{INV}} = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

W/ LINALG FUNCTION 'NORM' IN SCIPY IN NUMPY FOR PYTHON
I FIND $\|A^{-1}\|_{\infty} \approx 1.513 \times 10^5$

& SO $\text{COND}_{\infty}(A) = \|A\|_{\infty} \cdot \|A^{-1}\|_{\infty}$

$$\approx (2.167) \cdot (1.513 \times 10^5) = \boxed{3.279 \times 10^8}$$

$= \text{COND}_{\infty}(A)$