HW 2.3-1

Monday, July 13, 2020 4:00 PM

Q: Find the norm $\|A\|_\infty$ of each of the following matrices:

a) $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$

- $\|A\|_\infty$ is defined as the maximum row sum of absolute values.

$\Rightarrow a = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} \Rightarrow |1|+|2| \text{ or } |3|+|4|$

$\Rightarrow |3|+|4|$

$= 7$

$\Rightarrow \boxed{\|a\|^\infty = 7}$

b) $b = \begin{bmatrix} 1 & 5 & 1 \\ -1 & 2 & -3 \\ 1 & -7 & 0 \end{bmatrix} \Rightarrow \begin{matrix} 7 \\ 6 \\ 8 \end{matrix} \Rightarrow \boxed{\|b\|^\infty = 8}$