The SVD and the 2-norm

1分

A matrix A has the Singular Value Decomposition

$$A = \begin{bmatrix} 1 & 0 & 0 \\ 0 & -\frac{1}{\sqrt{2}} & \frac{1}{\sqrt{2}} \\ 0 & \frac{1}{\sqrt{2}} & \frac{1}{\sqrt{2}} \end{bmatrix} \begin{bmatrix} 7 & 0 \\ 0 & 2 \\ 0 & 0 \end{bmatrix} \begin{bmatrix} -\frac{\sqrt{3}}{2} & \frac{1}{2} \\ -\frac{1}{2} & -\frac{\sqrt{3}}{2} \end{bmatrix}.$$

What is the largest value that $\|Ax\|_2$ can attain for any x with $\|x\|_2 = 1$?

回答*

保存回答 提交最终回答