(a) Find the nonzero singular values of the matrix $A$ shown on the right.

(b) Let $A = U \Sigma V^T$ be the ‘thin’ SVD of $A$ ($U \in \mathbb{R}^{4 \times 2}, \Sigma \in \mathbb{R}^{2 \times 2}, V \in \mathbb{R}^{2 \times 2}$).

What is $\Sigma$? Select a (valid) matrix $V$.

(c) For the $V$ you selected in (b) find the corresponding matrix $U$

[Hint: No need to calculate eigenvectors to get $U$. Once $V$ and $\Sigma$ are known, $U$ can be extracted from the relation $A = U \Sigma V^T$ (!)]