

Written Assignment 2 : Due Wednesday, February 9

Problem 1: Show how you can flip two rows of a matrix using the other two row operations.

Problem 2: Suppose that $\mathbf{u}, \mathbf{w} \in \text{Span}\{\mathbf{v}_1, \mathbf{v}_2, \dots, \mathbf{v}_k\}$. Show that $\mathbf{u} + \mathbf{w} \in \text{Span}\{\mathbf{v}_1, \mathbf{v}_2, \dots, \mathbf{v}_k\}$.

Problem 3: Explain why if $k < n$, then it is impossible to have k vectors which span \mathbb{R}^n . In other words, show that if $\mathbf{v}_1, \mathbf{v}_2, \dots, \mathbf{v}_k$ are vectors in \mathbb{R}^n and $k < n$, then $\text{Span}\{\mathbf{v}_1, \mathbf{v}_2, \dots, \mathbf{v}_k\} \neq \mathbb{R}^n$.