Math 240 - Tutorial 8 **July 5, 2023**

1) [Quiz 4 Q2] Let $\{u_1, \ldots, u_p\}$ be a subset of a vector space V, and let $\mathcal{B}$ be a basis for V of size n. Prove that the vectors $u_1, \ldots u_p$ are linearly independent if and only if the coordinate vectors $[u_1]_\mathcal{B}, \ldots [u_p]_\mathcal{B}$ are linearly independent in $\mathbb{R}^n$.

---

2) [3.1] Compute the determinant of the matrix A via cofactor expansion.

$$A = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$$

3) [3.1] For $n \geq 2$, show that an $n \times n$ matrix with two identical rows has determinant 0.

[Midterm Questions?]