

Name (Last, First): _____

Student ID: _____

(1) Let A be a 3×4 matrix given as

$$\begin{bmatrix} 1 & 3 & 5 & 7 \\ 2 & 5 & 8 & 11 \\ 1 & 3 & 6 & 10 \end{bmatrix}.$$

What is the rank of A ? Is $\text{Nul } A = \mathbb{R}^4$? Is $\text{Col } A = \mathbb{R}^3$?

(2) Compute the determinant of the following matrix.

$$\begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 \\ 5 & 2 & 2 & 3 & 3 & 0 \\ 51 & 0 & 0 & 1 & 1 & 0 \\ 3 & 1 & -1 & 1 & 2 & 0 \\ 10 & -1 & 3 & 1 & 2 & 1 \\ 127 & 0 & 1 & 3 & 2 & 7 \end{bmatrix}$$