

Name (Last, First): _____

Student ID: _____

(1) Let A be a 3×7 matrix given as

$$\begin{bmatrix} 1 & 3 & 5 & 7 & 9 & 11 & 13 \\ 2 & 5 & 8 & 11 & 14 & 17 & 20 \\ 1 & 3 & 6 & 10 & 15 & 21 & 28 \end{bmatrix}.$$

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.

$$\begin{bmatrix} 1 & 1 & 1 & 1 & 1 \\ 2 & 4 & 6 & 8 & 10 \\ 0 & 0 & 0 & -1 & 1 \\ 3 & 3 & 7 & 1 & 2 \\ 5 & -1 & 3 & 9 & 2 \end{bmatrix}$$