1. What is the rank of the matrix \( A = \begin{bmatrix} 3 & -5 & 2 & -1 & 4 \\ 6 & 3 & 2 & 7 & -2 \\ 9 & 24 & 0 & 24 & -18 \end{bmatrix} \)? You may use Matlab or your calculator, but you may not use its “rank” operation (except to check your work).

2. What is the dimension of the row space of \( A \)?

3. What is the dimension of the column space of \( A \)?

4. What is the dimension of the nullspace of \( A \)? Do not compute the nullspace to answer this question.