

Math 205 Quiz 7

Name:

1. An engineer has a homogeneous system of 45 equations with 50 unknowns.

(a) What is the minimal number of free variables that the system could have?

(b) Could an associated non-homogeneous system be consistent? Why or why not?

(c) Could an associated non-homogeneous system be consistent with exactly one solution? Why or why not?

2. Find the determinant of the matrix $\begin{bmatrix} 2 & 1 & 4 & 0 \\ -2 & 0 & -3 & 1 \\ -1 & 0 & 2 & 0 \\ 0 & 2 & 0 & -1 \end{bmatrix}$.

3. What must be true of h and k for the determinant of $\begin{bmatrix} 1 & 0 & k \\ 0 & h & 0 \\ 1 & 0 & -1 \end{bmatrix}$ to be zero?