MATH 2418

Exam 2 Reviews

3.5

Dimensions of Four Subspaces

**Book**

Chapter main points

1. The column space C(A) and row space C(At) both have dimension r
2. The nullspace N(A) has dimensions n -r . Left nullspace N(AT) has dimension m – r.
3. Elimination produces bases for the row space and nullspace of A: They are the same as for R
4. Elemination of changes the column space and left nullspace (but dimensions don’t change)
5. Rank one matrices: A = uvT = column times row: C(A) has basis u, C(AT) has basis v.

Facts

(E32E31E21) A = U **--->** (E21-1E31-1E32-1) A = U **--->** A = LU

Rules

**Class**

**Recitation**