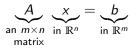
Let us return to looking at a linear system of m equations in n unknowns:



Q1: What is the set of *b*'s giving consistency? (Existence of solutions) Q2: What is the structure of the set of solutions? (Unique or infinitely many)

The answers lie in two important subspaces: **Definition:** The **column space** C(A) of A is the set of all linear combinations of the columns of A. **Definition:** The **null space** N(A) of A is the set of all solutions of the homogeneous system Ax = 0.