## $\mathrm{MA}~322$

## Assignment 1

- 1. A system with fewer equations than unknowns is an *underdetermined system*. A system with more equations than unknowns is an *overdetermined system*.
  - (a) Explain why an underdetermined system that has a solution must have infinitely many solutions.
  - (b) Can an overdetermined system have no solutions? one solution? infinitely many solutions? Explain why and give examples!
- 2. Write the vectors u, v, w, z as linear combinations of a and b.

