

**MATH 1200 - HOMEWORK ASSIGNMENT 5 - OCTOBER 20, 2008**

DUE: OCTOBER 27, 2008

For the first problems give an example of each or explain why such an example cannot be constructed.

- (1) Give an example of a function
  - (a) which is 1-1 but not onto
  - (b) which is onto but not 1-1
  - (c) which is both 1-1 and onto
  - (d) which is neither 1-1 nor onto
- (2) (see Mason, et al, p 171) Fred and Frank are two fitness fanatics on a run from point  $A$  to point  $B$ . Fred runs half of the way and walks the other half. Frank runs for half of the time and walks for the other half. They both run and walk at the same speeds. Who finishes first.
- (3) Frank decides that he wants to finish at the same time as Fred. How fast does he need to run so that this happens?