Discrete Mathematics

Combinations

1. A committee of 6 members is to be formed from a group consisting of 8 men and 10 women.
   (a) How many different committees could be formed?
   (b) How many all-men committees could be formed?
   (c) How many committees consisting of 3 men and 3 women could be formed?
   (d) How many committees with at least 4 men are possible?

2. A crate contains 20 light bulbs, but three of them are defective. A batch of five bulbs is randomly removed and tested.
   (a) How many testing batches are possible?
   (b) How many batches of all good bulbs are possible?
   (c) How many batches with exactly 1 good bulb are possible?

3. A 7 card go-fish hand is dealt from a regular deck.
   (a) How many hands are possible?
   (b) How many all-heart hands are possible?
   (c) How many hands consisting of 3 hearts and 4 clubs are possible?
   (d) How many hands containing all 4 aces are possible?