Homework 2  
Due date: 9/4/03  

1. A number of people were interviewed to find out who buys products $A$, $B$, and $C$ regularly. The results are shown in the diagram below.

(a) How many buy product $A$?
(b) How many buy product $A$ but not $B$?
(c) How many do not buy product $C$?
(d) How many buy product $B$ or $C$, but not $A$?
(e) How many people were interviewed?

2. The number of students taking algebra ($A$) or chemistry ($C$) is shown in the diagram below. If the total number of students surveyed to obtain the data is 200 then

(a) $n(A' \cup C) =$
(b) $n(A \cup C') =$
3. A chicken farmer surveyed his flock with the following results. The farmer has:

- 9 fat red roosters
- 2 fat red hens
- 26 fat roosters
- 37 fat chickens

- 7 thin brown hens
- 18 thin brown roosters
- 6 thin red roosters
- 5 thin red hens.

(a) How many roosters has the farmer?
(b) How many hens has the farmer?
(c) How many fat chicken has the farmer?

[Hint: You need a Venn diagram with circles for fat, for male (a rooster is a male, a hen is a female), and for red (assume that brown and red are opposites in the chicken world).]