EECS 122: Introduction to Communication Networks
Homework 3
(17 points)

Due: 1999-Sep-17-Fri (in class)

Problem 1. You are the network administrator of the University of Kaliphornia (UOK). The UOK has 10 departments, 3 of which need to accommodate approximately 5000 hosts each, while the rest (7) need about 600 hosts each. The department of finance of UOK has given you a single class B IP address.

  a) **(3 points)** How would you use subnetting to meet the needs of all departments in IP addresses?

  b) **(1 point)** Suppose instead of a single class B network address you could get a number of class C addresses. How many would you need? How would you use them?

Problem 2: chapter 2 problem 2. (1 point)
Problem 3: chapter 2 problem 4. (2 points)

Problem 4: chapter 2 problem 5. (2 points) Replace part (c) of the problem by "Can the switch start forwarding the packet before it has fully received it? If so, when?".

Problem 5: chapter 2 problem 7. (1 point) The labels on the machines in the figure (like `m;a.j;x`) are *name;IP address;Ethernet address*.

Problem 6: chapter 3 problem 1. (food-for-thought)
Problem 7: chapter 3 problem 2. (food-for-thought)
Problem 8: chapter 3 problem 3. (3 points)
Problem 9: chapter 3 problem 4. (2 points)
Problem 10: chapter 3 problem 5. (2 points)

Problem 11. (hands-on) Check the man-page of the Unix command `arp` (which sometimes resides in `/usr/sbin/arp` or `/etc/arp`). Use the command to find the Ethernet address of your host. Use it to look at the entries of the ARP table of your host and other hosts.