COMP9332 Network Routing and Switching
Self-assessed Tutorial for IPv4 Addressess

In this tutorial, you'll solve some of the questions from Forouzan (3rd Ed. Forouzan, pages 110-113 and 128-129):

1. Find the classes of the following IP addresses:
   a. 208.34.54.12
   b. 238.34.2.1
   c. 114.34.2.8
   d. 129.14.6.8
   e. 241.34.2.8
2. Find the classes of the following IP addresses:
   a. 11110111 11110011 10000111 11011101
   b. 10101111 11000000 11110000 00011101
   c. 11011111 10110000 00011111 01011101
   d. 11101111 11110111 11000111 00011101
   e. 01111111 11110000 01100111 01111101
3. Find the netid and the hosted of the following IP addresses:
   a. 114.34.2.8
   b. 132.56.8.6
   c. 208.34.54.12
4. In a class C subnet, we know the IP address of one the hosts and the mask as given below:
   IP Address: 192.44.82.16
   Mask: 255.255.255.192
   What is the first address (subnet address)?
5. Is your school (CSE) or organization (UNSW) using a classful address? If so, find out the class of the address.
6. In a block of addresses, we know the IP address of one host is 25.34.12.56/16. What is the first address (network address) and the last address (limited broadcast address) in this block?
7. In a block of addresses, we know the IP address of one host is 182.44.82.16/26. What is the first address (network address) and the last address (limited broadcast address) in this block?
8. What is the maximum number of subnets if the prefix length of a block is?
   a. 18
   b. 10
   c. 27
   d. 31

9. An organization is granted with the block 211.17.180.0/24. The administrator wants to create 32 subnets.
   a. Find the subnet mask.
   b. Find the number of addresses in each subnet.
   c. Find the first and last address in the first subnet.
   d. Find the first and last address in the last subnet (subnet 32).
10. An ISP is granted a block of addresses with 150.80.0.0/16. The ISP wants to distribute these blocks to 2600 customers as follows:
    a. The first group has 200 medium-size businesses; each needs 128 addresses.
    b. The second group has 400 small businesses; each needs 16 addresses.
    c. The third group has 2000 households; each needs 4 addresses.

    Design the sub-blocks and give the slash notation for each sub-block. Find out how many addresses are still available after these allocations.