Subnetting Numerical Problems

1. Consider a Class C network and propose an appropriate subnet mask to have 60, 60 & 120 systems.

2. Consider Class C network and propose an appropriate subnet mast to have subnet of size 75, 35, 25 and 18.

3. Consider a Class C network and propose an appropriate subnet mask to have subnet size of 30, 25, 22, 20, 18, 15.

4. An ISP is granted a block of addresses starting with 188.50.0.0/16. The ISP wants to distribute these blocks to 100 customers as follows.

   a. The first group has 30 medium-size businesses; each needs 128 addresses.

   b. The second group has 50 small businesses; each needs 64 addresses.

   c. The third group has 20 households; each needs 32 addresses

   Design the subblocks and give the slash notation for each subblock. Find out how many addresses are still available after these allocations.

5. In a block of addresses, we know the IP address of one host is 25.34.12.56/16. What are the first address (network address) and the last address (limited broadcast address) in this block?

6. An organization is granted the block 16.0.0.0/8. The administrator wants to create
   500   fixed-length subnets.
   a. Find the first and last addresses in subnet 1.
   b. Find the first and last addresses in subnet 500.

7. An ISP is granted a block of addresses starting with 190.100.0.0/16 (65536) addresses the ISP needs to distribute these addresses to three groups of customers as follows:

   a. The first group has 64 customers, each needs 256 addresses

   b. The second group has 128 customers; each needs 128 bits.

   c. The third group has 128 customers; each needs 64 addresses.

   Design the sub blocks and find out how many addresses are still available after these allocations.