Subnetting Sample #1

Dear Students:

These are some practice problems on subnetting and subnet masking. They are not to be handed in. No solutions will be provided, however I will be glad to answer your questions or check your work during my regular office hours or via e-mail. TA's are NOT involved with these practice problems. They will be busy grading your projects. In all of the questions, assume for simplicity that the all 0's and all 1's can be used for the subnet ID but they can't be used for host ID.

1. The IP address of a host on a class C network is 198.123.46.237. Four subnets are allowed on this network. What are the subnet mask and the subnet address?
2. What is the range of hosts (List their IP addresses) on a subnet whose address is 150.20.193.4?
3. Find the subnet address of a host whose IP address is 120.14.22.16 if the subnet mask is 255.255.128.0? What is the host ID?
4. Find the subnet masks that create the following number of subnets (two cases each) in the defined class. Also find the maximum # of hosts on each subnet
   a. 30 and 122 (class A),
   b. 30 and 122 (class B),
   c. 30 and 122 (class C)
5. An organization is granted a Class "A" address. The organization wants to create at least 6,000 subnets with the maximum # of hosts on each subnet. Find the best subnet mask in this case.
6. An organization is granted a Class "A" address. The organization wants to create the maximum # subnets with at least 50,000 hosts on each subnet. Find the best subnet mask in this case.
7. What is the maximum # of subnets using the following masks? The class is identified in parentheses is
   a. 255.255.224.0 (A)
   b. 255.255.224.0 (B)
   c. 255.255.255.224 (C)