**IFT 166 Introduction to Internet Networking**

**Lab 10**

**Classless Subnetting**

1. Which of the following is the subnet broadcast address for the subnet in which IP address 172.16.16.34/28 resides?

a. 172.16.16.255  
b. 172.66.255.255  
c. 172.255.255.255

d. 172.16.16.47

1. Represent /25 in dotted decimal format.
2. 255.0.0.0
3. 255.255.255.192
4. 255.255.255.0
5. 255.255.255.128
6. What valid host range is the IP address 121.21.21.21/23 a part of?
7. What is the last valid host on the subnetwork that the node 192.166.6.66/26 belongs to?
8. When calculating usable hosts per subnet, the following formula is used 2^bits - 2. For what reason are two addresses subtracted? (Select Two)
9. Broadcast Address
10. Private Address
11. Network Address
12. Loopback address
13. What is the first valid host on the subnetwork that the node 10.10.10.10/29 belongs to?
14. What is the broadcast address on the subnet that the node 10.32.0.0/255.240.0.0 belongs to?

1. How many subnets and usable hosts per subnet can you get from the subnet mask 255.255.255.252
2. How many subnets and usable hosts per subnet can you get from the subnet mask /30
3. What valid host range is the IP address 172.30.10.170/27 a part of?
4. What is the first valid host on the subnetwork that the node 66.66.66.66 /27 belongs to?

1. Two ways to represent the network mask that would allow 100 hosts would be:
2. /25
3. 255.255.255.128
4. 255.255.255.192
5. /26

1. What valid host range is the IP address 33.33.33.33/26 a part of?
2. What is the broadcast address of the network 172.16.188.0/22?
3. What is the last valid host on the subnetwork 172.19.240.192 255.255.255.224?