



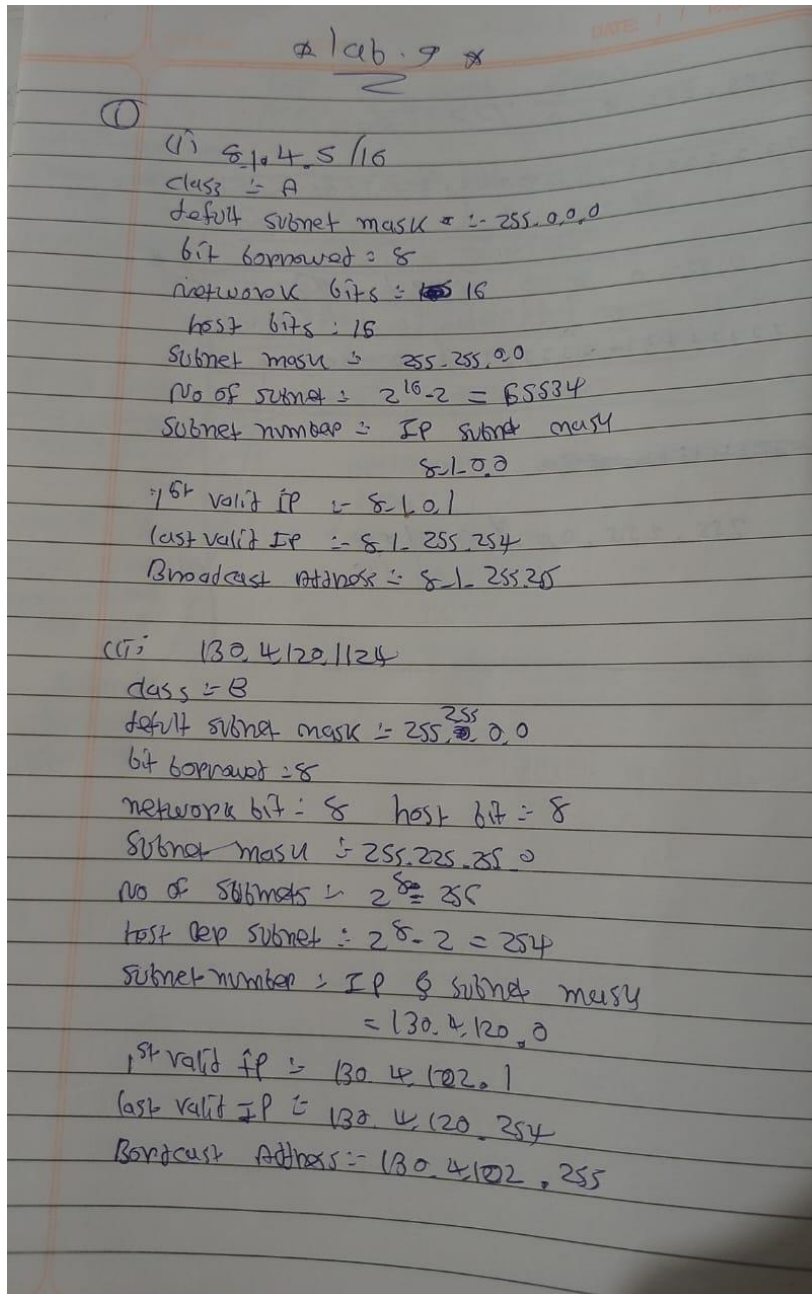
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Study of IP Addressing and sub-netting.

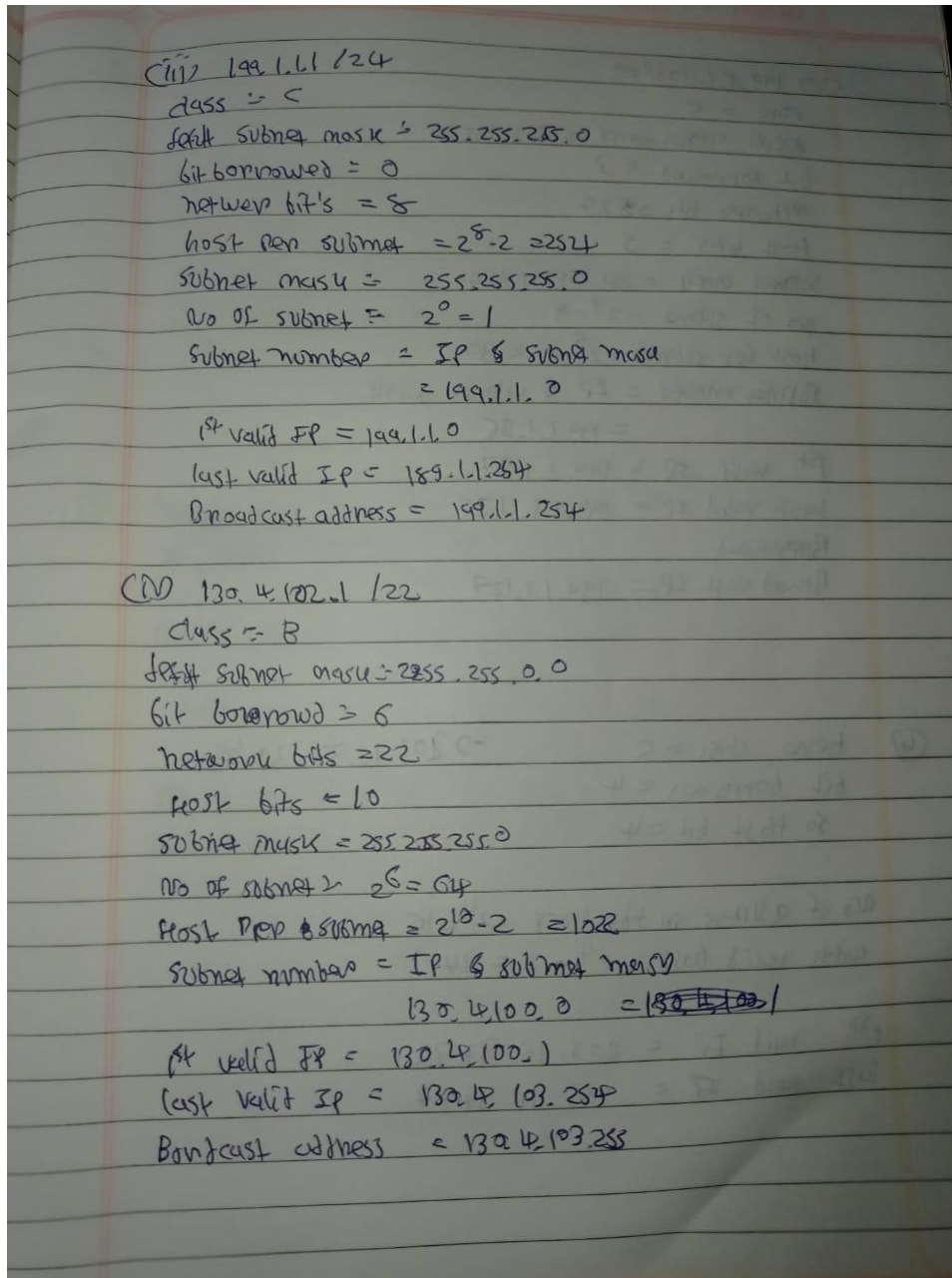
Practical Assignment #09:

1. Find default subnet marks, network bits, host bits, hosts per subnet, no of subnets, subnet number, 1st valid IP address, last valid IP address, and broadcast address.
 - i. 8.1.4.5/16
 - ii. 130.4.102.1/24
 - iii. 199.1.1.1/24
 - iv. 130.4.102.1/22
 - v. 199.1.1.100/27

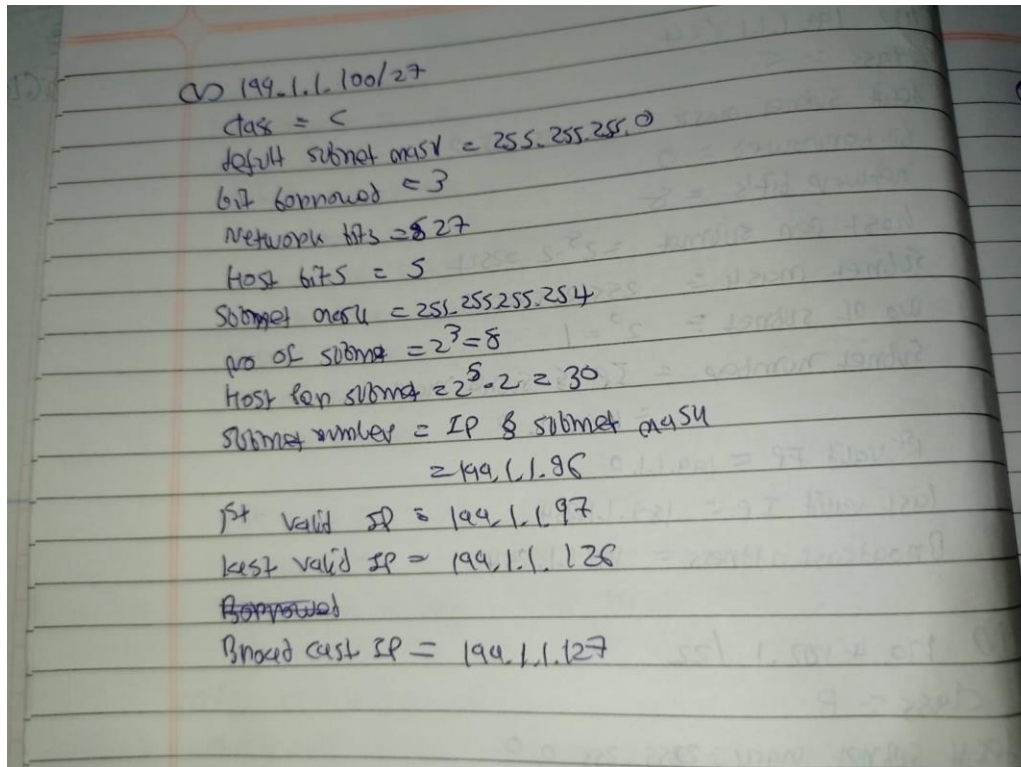
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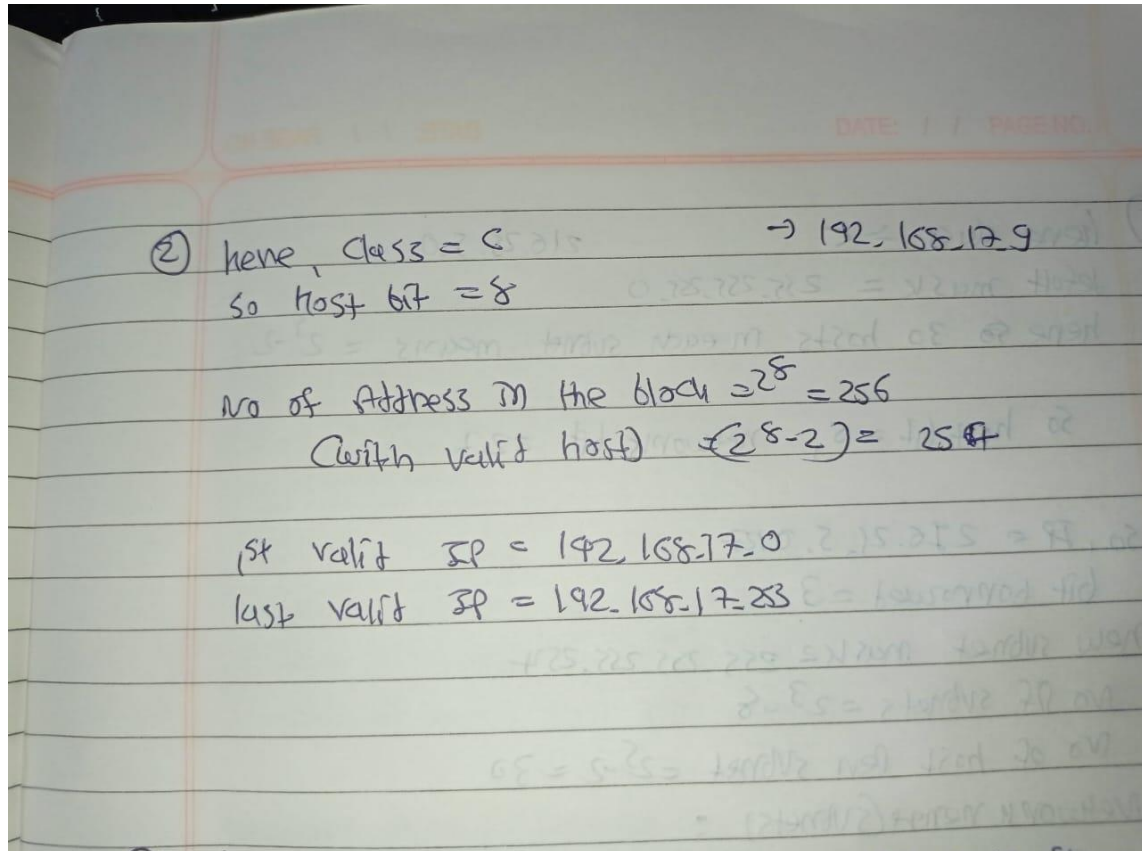


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2. A host in a class C network has been assigned an IP address 192.168.17.9. Find the number of addresses in the block, the first address, and the last address.



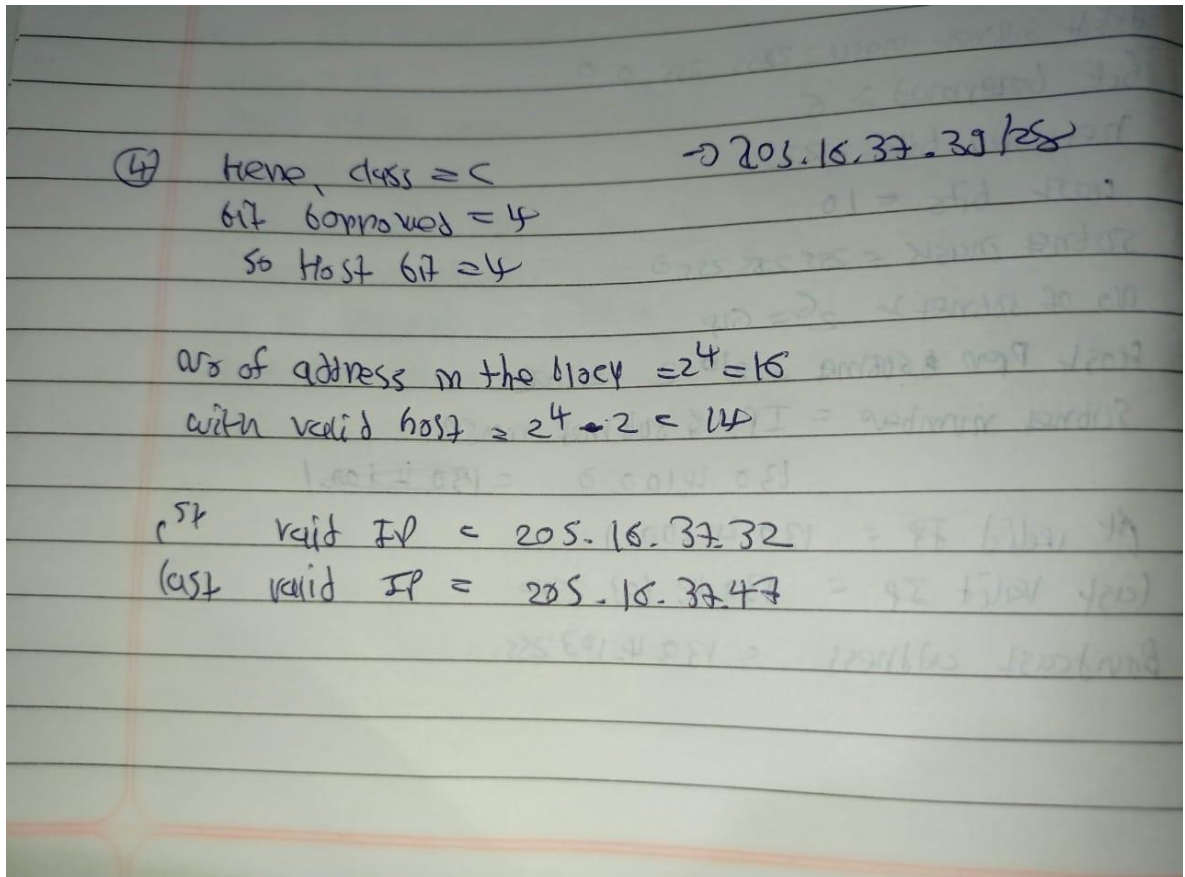
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3. An address in a block is given as 185.28.17.9. Find the number of addresses in the block, the first address, and the last address.

③ here, class B $\rightarrow 185.28.17.9$
so, ~~host~~ host bit = 16
no of address in the block = $2^{16} = 65536$
with valid hosts = $2^{16} - 2 = 65534$
1st valid IP = 185.28.0.0
last valid IP = 185.28.255.255

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4. A block of addresses is granted to a small organization. We know that one of the addresses is 205.16.37.39/28. What is the first address, last address, number of addresses in a block.



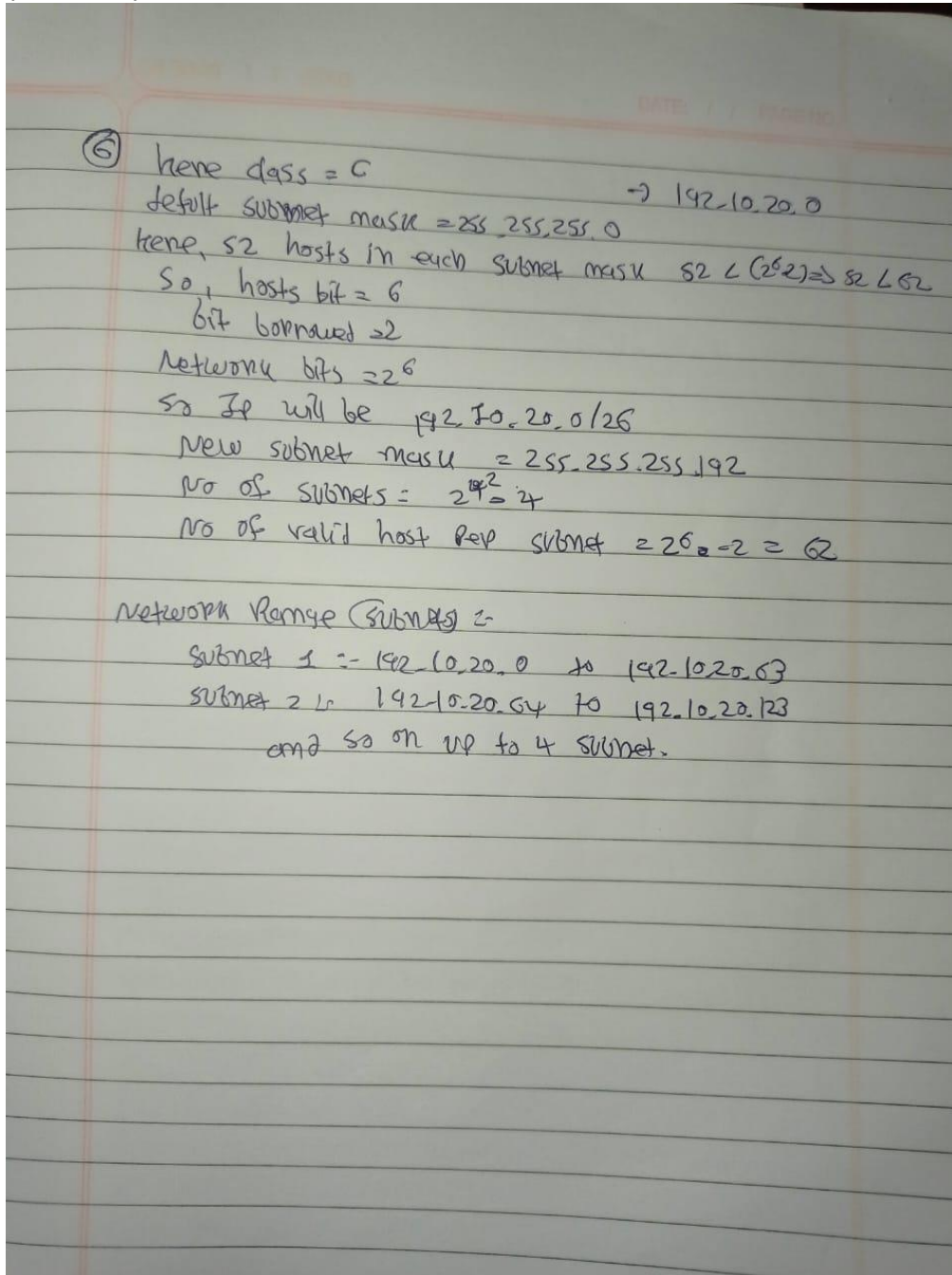
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5. Subnet the IP address 216.21.5.0 into 30 hosts in each subnet. Find Class, Default Mask, Bit Borrowed, New subnet mask, No. of Hosts & Subnet, Network Ranges (Subnets).

⑤ here class = C 216.21.5.0
default mask = 255.255.255.0
here 30 hosts in each subnet means $= 2^5 - 2$
So host bit = 5, network bit = 27
So, IP = 216.21.5.0/27
bit borrowed = 3
new subnet mask = 255.255.255.254
no of subnets = $2^3 = 8$
no of host per subnet = $2^5 - 2 = 30$
network range (subnets) :
subnet 1 = 216.21.5.0 to 216.21.5.31
subnet 2 = 216.21.5.32 to 216.21.5.63
and so on up to 8 subnet

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6. Subnet the IP address 192.10.20.0 into 52 hosts in each subnet. Find Class, Default Mask, Bit Borrowed, New subnet mask, No. of Hosts & Subnet, Network Ranges (Subnets).



⑥ here class = C
default subnet mask = 255.255.255.0 \rightarrow 192.10.20.0
here, 52 hosts in each subnet mask $52 < (2^6) \Rightarrow 52 < 62$
So, hosts bit = 6
bit borrowed = 2
Network bits = 2^6
So IP will be 192.10.20.0/26
New subnet mask = 255.255.255.192
No of subnets = $2^2 = 4$
No of valid host per subnet = $2^6 - 2 = 62$

Network Range (Subnets) :-
Subnet 1 :- 192.10.20.0 to 192.10.20.63
Subnet 2 :- 192.10.20.64 to 192.10.20.127
and so on up to 4 subnet.