Things to Practice :—

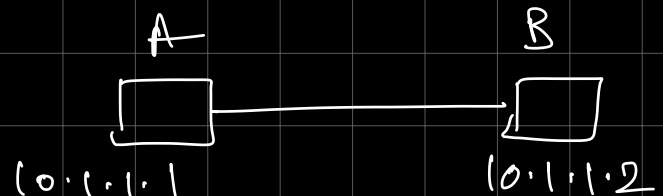
- Decimal to binary conversion.
- Address class identification.
- Network & host identification.
- Network addresses.
- Default subnet mask.

✯ Anding Process:

You know the functioning of And gates

— Computer uses it check the network id.

flow 2:



↓ subnet mask 255.0.0.0

00001010.00000001.00000001.00000001
11111111.00000000.00000000.00000000

00001010.00000000.00000000.00000000

10 0 0 0

10.0.0.0 network id

for 10.1.1.2
↙
same as A. ∴ the computer will know that the devices can connect.

"Subnetting is the process of dividing big networks into smaller part."

- **Building Base for problem solving :-**

Given :

Network id : 192.168.1.0/24

to do :

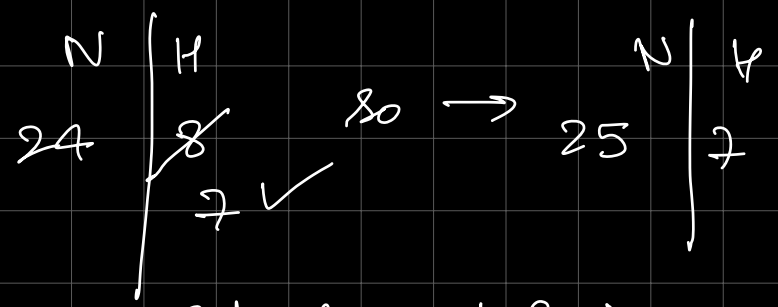
divide the network into two parts

N | H } for class C
24 | 8

$2^0 = 1$
$2^1 = 2$
$2^2 = 4$
$2^3 = 8$
$2^4 = 16$
$2^5 = 32$
$2^6 = 64$
$2^7 = 128$
$2^8 = 256$
$2^9 = 512$

- We cannot have exact 100
- we would have to take 128 exactly

So we asking for 7 bits instead of 8 host bits.



Subnet mask for:

$25 = 8+8+8+1$

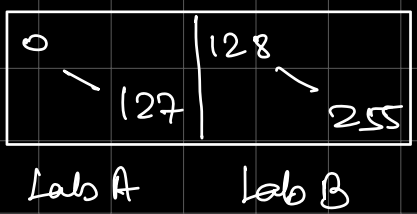
$= 255.255.255.128$

So, in the above question.

subnet mask without subnetting : 255.255.255.0

subnet mask with subnetting : 255.255.255.127

& we have reduced the wastage of IP addresses.



Ques 2:

I.P. 192.150.10.0/24

divide 50-50 comps (Hosts) in 4 labs

$2^6 = 64$ closest to 50

so

Previously

N	H
24	8

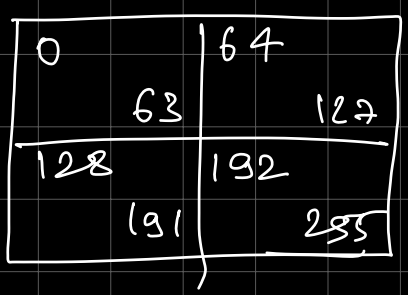
Now

N	H
26	6

$2^6 = 64$ (6 = block division)

8+8+8+2

255.255.255.192 (Subnet mask)



Tech terms:

- FLSM (Fixed length subnet mask)
  Eg: every lab has 50/100 or any other number.
- VLSM (variable length subnet mask)
  Eg: labs having varying number of PCs & systems.

Ques 3:

Network: 200.1.1.1/24

8 Comp labs & no. of computer labs do not matter

"When only dividing networks, & you don't care about hosts, you only care about Network part.

N	H
24	8

$\because 2^3 = 8$

N	H
24	6
+1	
3	

⇒

N	H
27	6

new subnet mask: 255.255.255.224

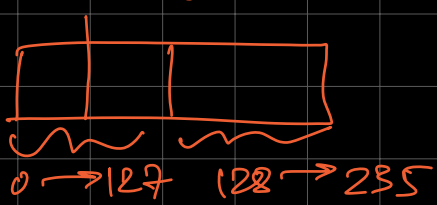
Ques:

192.168.1.0/25

"subnet of subnet"

↳ divide once more

N	H
25	7



N	H
26	6

subnet mask:

255.255.255.192