1) a) 3 subnets, 45 available IP addresses

$2^6 = 64 > 45$

Subnet mask: $32 - 6 = 26$

$\Rightarrow$ 255.255.255.192 (26 1's)

since 11111111.11111111.11111111.11000000

Lets choose IP: 192.44.100.x

In each subnet: 64 hosts and 62 usable hosts

Can choose for example the following 3 subnets from available 4 subnet ($2^2 = 4$)

0) 192.44.100.0 - 192.44.100.63 -

1) 192.44.100.64 - 192.44.100.124 -

2) 192.44.100.128 - 192.44.100.191 -

} 255.255.255.192 (subnet mash)

network

broadcast

b) 5 subnets, 28 available IP addresses

$2^5 = 32 > 28$

Subnet mash: $32 - 5 = 27$

$\Rightarrow$ 11111111.11111111.11111111.11100000

$\Rightarrow$ 255.255.255.224

$\Rightarrow 2^3 = 8$ subnets (will choose 5)

In each subnet: $2^5 = 32$ hosts (30 usable hosts)

Lets use

0) 190.5

1) 190.5

2) 190.

3) 190

4) 190.

3) IP

$\Rightarrow$