**Variable Length Subnet Mask (VLSM)**

Network Class C

Network ID: 192.168.10.0/24

Subnet Mask: 11111111. 11111111. 11111111.00000000

Subnet Mask: 255.255.255.0

2n – 2 = # hosts (n # zeros in subnet mask)

28 – 2 = 254 hosts

1. Network ID: 192.168.10.0/24
2. First IP: 192.168.10.1/24
3. Last IP: 192.168.10.254/24
4. Broadcast: 192.168.10.255/24

VLSM

Subnet 1

2n – 2=126 >= 120 -> n=7 (n # zeros)

Subnet Mask: 11111111. 11111111. 11111111.10000000

Subnet Mask: 255.255.255.128

1. Network ID: 192.168.10.0/25
2. First IP: 192.168.10.1/25 # network+1
3. Last IP: 192.168.10.126/25 #network + valid hosts
4. Broadcast: 192.168.10.127/25 # last+1

Network01

25 – 2=30 >= 25 -> n=5 (n # zeros)

Subnet Mask: 11111111. 11111111. 11111111.11100000

Subnet Mask: 255.255.255.224

1. Network ID: 192.168.10.128/27
2. First IP: 192.168.10.129/27 = network +1
3. Last IP: 192.168.10.158 /27 = network +30
4. Broadcast: 192.168.10.159/27 = last +1

Network03

22 – 2=2 >= 2 -> n=2 (n # zeros)

Subnet Mask: 11111111. 11111111. 11111111.11111100

Subnet Mask: 255.255.255.252

1. Network ID: 192.168.10.160/30
2. First IP: 192.168.10.161/30
3. Last IP: 192.168.10.162 /30
4. Broadcast: 192.168.10.163/30