192.168.100.17

Host 0001
Network 192.168.100.16
Brodcast 192.168.100.00011111-192.168.100.31
Host range 192.168.100.17 to 192.168.100.30
192.168.100.30-host 14

192.168.100.66

66/2
06 33/2
0 13 16/2
1 0 8/2
0 4/2
0 2/2
0 1
Host 00010
01000000 =64 network
01011111=95 host
01000010-01000001 -65
192.168.100.65 to 192.168.100.94
2^5-2=30

172.16.10.5/20
172/2
12. 86/2
0 06 43/2
0 03 21/2
1 01 10/2
1. 0 5/2
1 2/2
0. 1
10101100.00010000.00001010.
11111111.11111111.11110000.00000000
11110000=2^7+2^6+2^5+2^4=240
subnet mask 255 . 255 . 240 . 0
network 16+4=20 172.16.0.0
host 12

00001010.00000101-00000000.00000001-0.1

00001111.11111110-15.254
Range 172.16.0.1 to 172.16.15.254
Broadcast 0000|1111.11111111-172.16.15.255
11111111.11111111.11111111.10000000-255.255.255.128

172.16.10.33/255.255.252.0
252/2
05 126/2
12 06 63/2
0 0 03 31/2
1 11 15/2
1 1 7/2
1 3/2
1 1
255.255.11111100.0
Network 22bits -> 172.16.8.0
10-00001010-00001000-8
Broadcast 00001011.11111111-172.16.11.255
Range 172.16.8.1-172.16.11.254

EXERCICE 2
126 host
2^7=128->10000000
Submask 255.255.255.128
Network x.x.x.128
Broadcast x.x.x.255
Range x.x.x.129 to x.x.x.254

EXERCICE 3
Network address 192.168.10.0/26 -Subnet mask 255.255.255.192
192/2
12 96/2
0 16. 48/2
0 08 24/2
0 04 12/2
0 0. 6/2
0 3/2
1 1

192=11000000

how many subnet
01 000000-2^6=64
10 000000-2^7=128
11 000000-2^7+2^6=192
how many host - 6- 000000
valid subnets
00 111111-63
01 111111-127
10 111111-191
11 111111-255

EXCERCICE 5
subnet mask 255.255.255.__

SUBNET	NETWORK ADDRESS	HOST ADDRESSES	BROADCAST ADDRESS
1 subnet	192.168.162.0	192.168.162.1- 192.168.162.31	192.168.162.32
2 subnet	192.168.162.32	192.168.162.33-192.168.162.63	192.168.162.64
3 subnet	192.168.162.64	192.168.162.65-192.168.162.95	192.168.162.96
4 subnet	192.168.162.96	1192.168.162.97-192.168.162.127	192.168.162.128
5 subnet	192.168.162.128	192.168.162.129-192.168.162.159	192.168.162.160
6 subnet	192.168.162.160	192.168.162.161-192.168.162.223	192.168.162.224

00000000-0
0010000-2^5=32
01000000-2^6 =64
01100000-2^6+2^5=96
10000000-2^7= 128
10100000-2^7+2^5=160
11100000-2^7+2^6+2^5=224
192=11000000-we know the net is type C so it start with 110
192.168.162.00000000- if we use 4 ceros we saw that we don’t have enough bits(2^4=16-2=14) so we use one more bit (2^5=32-2=30) now we know that we need to use 5 bits for host and 27bist for network