IP AND SUBNETTING EXERCISES

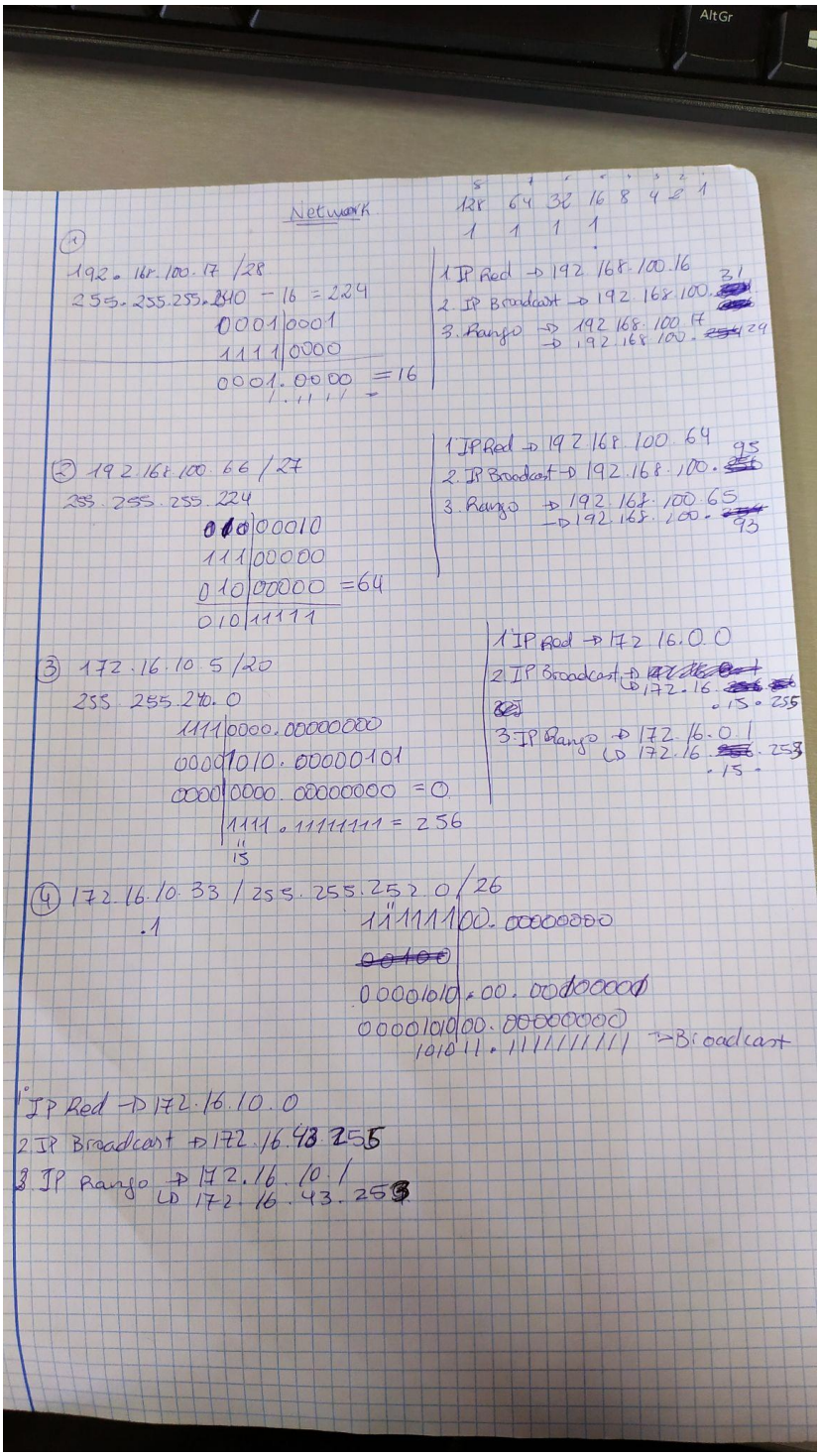
1. Write the subnet, broadcast address and valid host range for the following:

a. 192.168.100.17, with 4 bits of subnetting

b. 192.168.100.66, with 3 bits of subnetting

c. 172.16.10.5/20

d. 172.16.10.33/255.255.252.0



2. You have been asked to create a subnet that supports 126 hosts. What subnet mask Is this the most efficient one?

255.255.255.128/25

3. Given the following
a. Network address: 192.168.10.0
b. Subnet mask: 255.255.255.192 or /26
How many subnets are there? How many hosts? What are the valid subnets?

192 = 11000000, we do the subnets we are going to take the two bits
We can have 4 subnetings 0,64,128,192

2^6-2=64-2=62 number of hosts

63,127,191,255

5. XYZ Company would like to subnet its network so that there are five separate subnets. They will need 25 computers in each subnet. Complete the following table: NOTE: If you create more than five subnets, list the extra ones too.

Subnet	Network address	Host addresses	Broadcast address
Subnet mask: 255.255.255.___			
First subnet	192.168.162.___	192.168.162.___ - 192.168.162.___	192.168.162.___
Second subnet	192.168.162.___	192.168.162.___ - 192.168.162.___	192.168.162.___
Third subnet	192.168.162.___	192.168.162.___ - 192.168.162.___	192.168.162.___
Fourth subnet	192.168.162.___	192.168.162.___ - 192.168.162.___	192.168.162.___
Fifth subnet	192.168.162.___	192.168.162.___ - 192.168.162.___	192.168.162.___
Sixth subnet ?			
?			

2^5=32-2=30
our mask will be 255.255.255.224 /27

subnet	Network address	host address	broadcast address
	192.168.162.**0**	192.168.162.**1**-192.168.162.**30**	192.168.162.**31**
	192.168.162.**32**	192.168.162.**33**-192.168.162.**62**	192.168.162.**63**
	192.168.162.**64**	192.168.162.**65**-192.168.162.**94**	192.168.162.**95**
	192.168.162.**96**	192.168.162.**97**-192	192.168.162.**127**

		.168.162.**126**	
	192.168.162.**128**	192.168.162.**129**-19 2.168.162.**158**	192.168.162.**159**
	192.168.162.**160**	192.168.162.**161**-19 2.168.162.**190**	192.168.162.**191**
	192.168.162.**192**	192.168.162.**193**-19 2.168.162.**222**	192.168.162.**223**
	192.168.162.**224**	192.168.162.**225**-19 2.168.162.**254**	192.168.162.**255**