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Assignment 4

Question # 1:

You are given the network **172.16.0.0/16**.

- Divide it into **30 equal subnets** using FLSM.
- Find the subnet mask, total hosts per subnet, and the broadcast address of the **14th subnet**.

Answers:

- Subnet mask: 255.255.248.0 (/21)
- Total hosts per subnet: 2046
- Broadcast address of the 14th subnet: 172.16.119.255

Question # 2:

A company is assigned the IP range **10.0.0.0/8**.

- They need **600 subnets** for their branch offices.
- Determine the subnet mask to create 600 subnets using FLSM.
- Provide the network address, first usable IP, and broadcast address of the **375th subnet**.

Answers:

- Subnet mask: 255.255.192.0 (/18)
- Network address of the 375th subnet: 10.5.220.0/18
- First usable IP: 10.5.220.1
- Broadcast address: 10.5.223.255

Question # 3:

An ISP has assigned the IP address block **192.168.200.0/24** to a customer.

- The customer requires **20 subnets** with equal sizes using FLSM.
- What subnet mask will you apply?
- Calculate the network address, first usable address, last usable address, and broadcast address for the **8th subnet**.

Answers:

- Subnet mask: 255.255.255.248 (/29)
- Network address of the 8th subnet: 192.168.200.64/29
- First usable IP: 192.168.200.65
- Last usable IP: 192.168.200.70
- Broadcast address: 192.168.200.71

Question # 4:

You are given the IP address **203.0.113.0/25**.

- Subdivide it into **8 subnets** using FLSM.
- Determine the subnet mask and the range of usable IPs for each subnet.
- Find the network address and broadcast address of the **6th subnet**.

Answers:

- Subnet mask: 255.255.255.240 (/28)
- Network address of the 6th subnet: 203.0.113.96/28
- Broadcast address of the 6th subnet: 203.0.113.111
- Usable IP range for each subnet: First is network+1, last is broadcast-1.

Question # 5:

A network administrator is assigned **198.51.100.0/22**.

- They want to create **16 equal-sized subnets** using FLSM.
- Calculate the new subnet mask.
- Identify the network address, first and last usable IP, and the broadcast address of the **12th subnet**.

Answers:

- New subnet mask: 255.255.255.192 (/26)
- Network address of the 12th subnet: 198.51.103.0/26
- First usable IP: 198.51.103.1
- Last usable IP: 198.51.103.62
- Broadcast address: 198.51.103.63