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1. You have been given an IP Address 10.20.4.13/29 and been asked to find out the following pieces;

   a. Subnet Address – 10.20.4.8/29
   b. First Valid Host Address – 10.20.4.9/29
   c. Last Valid Host Address – 10.20.4.14/29
   d. Broadcast Address – 10.20.4.15/29
   e. Subnet Mask – 255.255.255.248

2. What is the range of assignable IP addresses for a subnet containing an IP address of 172.16.1.10 /19?

   172.16.0.1 – 172.168.31.254

3. A host in your network has been assigned an IP address of 192.168.181.182 /25. What is the subnet to which the host belongs?

   192.168.181.128/25

4. You are working with a Class B network with the private IP address of 172.16.0.0 /16. You need to maximize the number of broadcast domains, where each broadcast domain can accommodate 1000 hosts. What subnet mask should you use?

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5. What is the directed broadcast address of a subnet containing an IP address of 172.16.1.10 /19?

   172.16.31.255

6. A customer is using a Class C network of 192.168.10.0 subnetted with a 28-bit subnet mask. How many subnets can be created by using this subnet mask?

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7. What is the subnet address of the IP address 192.168.5.55 with a subnet mask of 255.255.255.224?

   192.168.5.32/27

8. You are working for a company that will be using the 192.168.1.0 /24 private IP address space for IP addressing inside their organization. They have multiple geographical locations and want to carve up the 192.168.1.0 /24 address space into subnets. Their largest subnet will need 13 hosts. What subnet mask should you use to accommodate at least 13 hosts per subnet, while maximizing the number of subnets that can be created?

   255.255.255.240 or /28

9. A customer is using a Class C network of 192.168.10.0 subnetted with a 28-bit subnet mask. How many assignable addresses are available in each of the subnets?

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10. What subnet mask should be used to subnet the 192.168.10.0 network to support the number of subnets and IP addresses per subnet shown in the following topology.

255.255.255.192