VLSM and Route Summary

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Activity:

This is a small group activity consisting of a VLSM IP subnetting and route summarization exercise. The VLSM IP subnetting section includes scenarios regarding overlap and IP subnet design with VLSM. The route summarization questions include scenarios that require the creation of summary routes.

Questions:

1. The current subnet design utilizes the 88.33.89.0 mask 255.255.240.0 IP subnet. Another engineer recently created a new VLAN with the IP subnet 88.33.0.0 mask 255.255.128.0. The network has been experiencing issues since this change. Does the new IP subnet overlap with the existing IP subnet?
2. The current subnet design utilizes the 192.168.16.97/30 IP subnet. You have received a request to create three additional subnets that utilizes the available address immediately following the IP subnet listed. The three new subnets require six host addresses. What are the IP subnets IDs and usable host address ranges for these new IP subnets?
3. The network you manage correctly has the IP subnets 66.200.1.1.0, 66.200.2.0, and 66.200.3.0, all with mask 255.255.255.0, in use. You will be establishing a connection with a business partner and one of their requirements is the use of a summary route. Based on your subnets in use what would be the summary route that includes the active subnets but does not include more prefixes than necessary?
4. Based on Question 3, what would the summary route need to be changed to include the IP subnets 66.200.4.0/24 thru 66.200.15.0/24?
5. The network you manage correctly has the IP subnets listed below. The subnets are discontiguous, but you been assigned the task of creating summary routes for the networks. You need to identity how may summary routes you will need to ensure that you do not include unused prefixes in the route. Also identify the summary routes.

IP subnets in use:

10.45.1.0/24 🡪 10.14.127.0/24

10.45.245.0/24 🡪10.45.254.0/24

10.48.1.0/24 🡪10.48.191.0/24