**Worksheet 19 - Hierarchical addressing**

1. Let’s say you want to set up a subnetwork with 25000 hosts and assuming you are using classful addressing, what kind of addresses would you give out to maximize address space utilization? You cannot waste more than 1000 IP addresses.
2. Let’s say you want to set up a subnetwork with 25000 hosts and assuming you are using classless addressing, what kind of addresses would you give out to maximize address space utilization? You cannot waste more than 1000 IP addresses.

1. Let’s say an ISP has the address space 192.168.48.0/20. The ISP needs to equally divide the address space between 4 organizations.
   1. List the address space (range of IPs) assigned to the 4 organizations.
   2. How many hosts can be supported by each of the organizations.
2. Let’s say an ISP has the address space 192.168.56.0/21. The ISP needs to equally divide the address space between 8 organizations.
   1. List the address space (range of IPs) assigned to the 8 organizations.
   2. How many hosts can be supported by each of the organizations.
3. Let’s say an ISP has the address space 192.168.56.0/21. The ISP needs to equally divide the address space between 16 organizations.
   1. List the address space (range of IPs) assigned to the 16 organizations.
   2. How many hosts can be supported by each of the organizations.