# Excercise Subnetting

Please use a subnet calculator for doing this exercise.

For example Bitcricket IP Calculator.

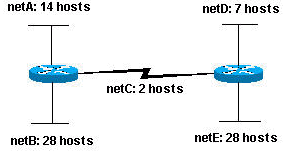
1. Given a Class C network and the net bits identified (CIDR), complete the following table to identify the subnet mask and the number of host addresses possible for each mask.

|  |  |  |
| --- | --- | --- |
| **Classful Address** | **Subnet Mask** | **Number of Hosts per Subnet (2x – 2)** |
| **/24** | **255.255.255.0** | **254** |
| **/25** | **255.255.255.128** | **126** |
| **/26** | **255.255.255.192** | **62** |
| **/27** | **255.255.255.224** | **30** |
| **/28** | **255.255.255.240** | **14** |
| **/29** | **255.255.255.248** | **6** |
| **/30** | **255.255.255.252** | **2** |

2. Complete and write the subnet, broadcast address, and a valid host range.

|  |  |  |  |
| --- | --- | --- | --- |
| **Host IP address** | **Subnet** | **Host range** | **Broadcast address** |
| **192.168.100.25/ 30** | .24 | 25-26 | .27 |
| **192.168.100.33/ 28** | .32 | 33-46 | .47 |
| **192.168.100.65/ 27** | .64 | 65-94 | .95 |
| **192.168.100.17/ 29** | .16 | 17-22 | .23 |
| **192.168.100.129/ 25** | .128 | 129-254 | .255 |
| **192.168.100.1/ 24** | .0 | 1-254 | .255 |

3. Given the Class C network of **204.15.5.0/24**, complete the subnets in order to create the network in Figure that meet the host requirements shown below.



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Net** | **Subnet ID** | **Host range** | **Broadcast adress** | **Subnet Mask** |
| **B** | 204.15.5.0 | 204.15.5.1-30 | 204.15.5.31 | /27 |
| **E** | 204.15.5.32 | 204.15.5.33-62 | 204.15.5.63 | /27 |
| **A** | 204.15.5.64 | 204.15.5.65-78 | 204.15.5.79 | /28 |
| **D** | 204.15.5.80 | 204.15.5.81-94 | 204.15.5.95 | /28 |
| **C** | 204.15.5.96 | 204.15.5.97-98 | 204.15.5.99 | /30 |

4. You need to subnet a network that has 8 subnets, each with a maximum of 30 hosts. Which subnet mask would you use?

~~A. 255.255.255.192~~

**B. 255.255.255.224**

~~C. 255.255.255.240~~

~~D. 255.255.255.248~~

5. Which mask should you use on a point-to-point WAN link in order to reduce the waste of IP addresses (the minimum host IP addresses)?

1. ~~/27~~
2. ~~/28~~
3. ~~/29~~
4. **/30**
5. ~~/24~~