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1. **Subnetting a Class A Network**  
   *You have the class A network ID of 14.0.0.0, and you need to divide this network into eight subnets. Use* some paper and calculate the network ID, first valid address, last valid address, and broadcast address of each of the eight subnets. Don’t forget to determine the new subnet mask of these networks as well. Fill in the following table when you have completed your work on paper:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Network ID | First Valid Address | Last Valid Address | Broadcast Address |
| Subnet 1 | *14.0.0.0* | *14.0.0.1* | 14. 31.255 .254 | 14.31.255.255 |
| Subnet 2 | *14.32.0.0* | 14.32.0.1 | 14. 63.255 .254 | 14.63.255.255 |
| Subnet 3 | *14.64.0.0* | 14.64.0.1 | 14. 95.255 .254 | 14.95.255.255 |
| Subnet 4 | *14.96.0.0* | 14.96.0.1 | 14. 127.255 .254 | 14.127.255.255 |
| Subnet 5 | 14.128.0.0 | 14.128.0.1 | 14.159.255 .254 | 14.159.255.255 |
| Subnet 6 | 14.160.0.0 | 14.160.0.1 | 14. 191.255 .254 | 14.191.255.255 |
| Subnet 7 | 14.192.0.0 | 14.192.0.1 | 14. 223.255 .254 | 14.223.255.255 |
| Subnet 8 | 14.224.0.0 | 14.224.0.1 | 14. 255.255 .254 | 14.255.255.255 |

New Subnet Mask: \_\_\_\_\_255.224.0.0\_\_\_\_\_\_\_\_\_\_

1. **Subnetting a Class B Network**  
   You have the class B network ID of 150.87.0.0, and you need to divide this network into 16 subnets. Use some paper and calculate the network ID, first valid address, last valid address, and broadcast address of each of the *first six subnets ofthe 16*. Don’t forget to determine the new subnet mask of these networks as well. Fill in the following table when you have completed your work on paper:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Network ID | First Valid Address | Last Valid Address | Broadcast Address |
| Subnet 1 | 150.87.0.0 | 150.87.0.1 | **150.87.15.254** | 150.87.15.255 |
| Subnet 2 | 150.87.16.0 | 150.87.16.1 | **150.87.31.254** | **150.87.31.255** |
| Subnet 3 | 150.87.32.0 | 150.87.32.1 | **150.87.47.254** | **150.87.47.255** |
| Subnet 4 | 150.87.48.0 | 150.87.48.1 | **150.87.63.254** | **150.87.63.255** |
| Subnet 5 | 150.87.64.0 | 150.87.64.1 | **150.87.79.254** | **150.87.79.255** |
| Subnet 6 | 150.87.80.0 | 150.87.80.1 | **150.87.95.254** | **150.87.95.255** |

New Subnet Mask: \_\_\_\_\_\_255.255.240.0\_\_\_\_\_\_\_\_\_

1. **Subnetting a Class C Network**  
   You have the class C network ID of 202.15.67.0, and you need to divide this network into four subnets. Use some paper and calculate the network ID, first valid address, last valid address, and broadcast address of each of the four subnets. Don’t forget to determine the new subnet mask of these networks as well. Fill in the following table when you have completed your work on paper:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Network ID | First Valid Address | Last Valid Address | Broadcast Address |
| Subnet 1 | 202.15.67.0 | 202.15.67.1 | 202.15.67.62 | 202.15.67.63 |
| Subnet 2 | 202.15.67.64 | 202.15.67.65 | 202.15.67.126 | 202.15.67.127 |
| Subnet 3 | 202.15.67.128 | 202.15.67.129 | 202.15.67.190 | 202.15.67.191 |
| Subnet 4 | 202.15.67.192 | 202.15.67.193 | **202.15.67.254** | 202.15.67.255 |

New Subnet Mask: \_\_\_\_\_\_\_255.255.255.192\_\_\_\_\_\_\_\_