Custom Subnet Masks

Problem 7

Number of needed subnets **2000**

Number of needed usable hosts **15**

Network Address **178.100.0.0**

Address class ___B_____

Default subnet mask ____255.255.0.0_____

Custom subnet mask ___255.255.255.224___

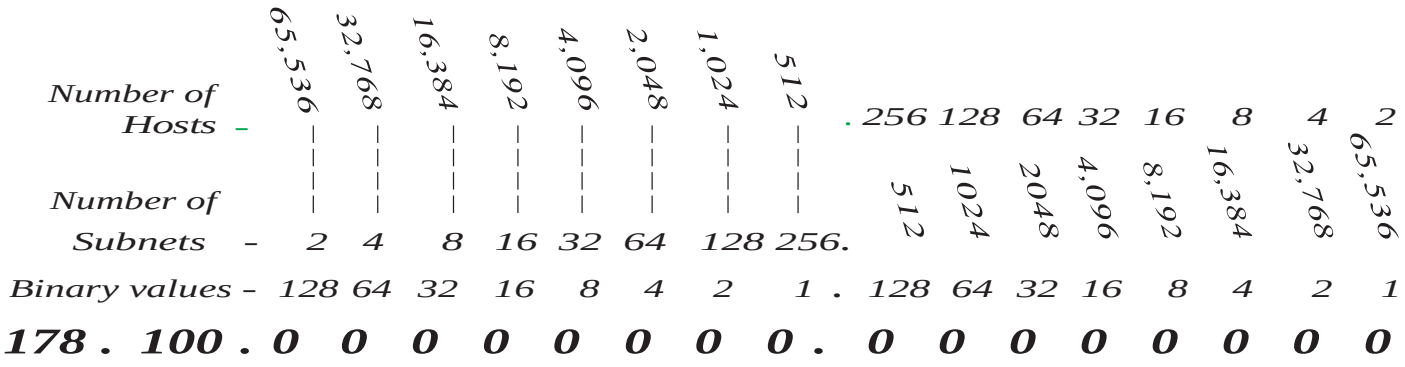
Total number of subnets _____2048_____

Total number of host addresses _____64_____

Number of usable addresses _____62_____

Number of bits borrowed _____11_____

Show your work for <u>Problem 7</u> in the space below.



Custom Subnet Masks

Problem 15

Number of needed usable hosts **50**

Network Address **172.59.0.0**

Address class __B_____

Default subnet mask _____255.255.0.0_____

Custom subnet mask _____255.255.255.224_____

Total number of subnets _____2048_____

Total number of host addresses _____64_____

Number of usable addresses _____62_____

Number of bits borrowed _____11_____

Show your work for Problem 15 in the space below.

Subnetting

Problem 11

Number of needed usable hosts **8,000**

Network Address **135.70.0.0**

Address class ___B_____

Default subnet mask ___255.255.0.0_____

Custom subnet mask _____255.255.224.0_____

Total number of subnets _____16_____

Total number of host addresses ___8192_____

Number of usable addresses _____8190_____

Number of bits borrowed _____3_____

What is the 6th subnet range? 137.50.160.0 – 137.50.191.255

What is the subnet number for the 7th subnet? ___137.50.192.0_____

What is the subnet broadcast address for the 3rd subnet? __137.50.95.255_____

What are the assignable addresses for the 5th subnet? ___137.50.128.1 – 137.50.159.254__

Show your work for <u>Problem 11</u> in the space below.

Subnetting

Problem 12

Number of needed usable hosts **45**

Network Address **198.125.50.0**

Address class ____C_____

Default subnet mask _____255.255.255.0_____

Custom subnet mask _____255.255.255.192__

Total number of subnets _____4_____

Total number of host addresses _____64_____

Number of usable addresses _____62_____

Number of bits borrowed _____2_____

What is the 2nd subnet range? _198.125.50.64 - 198.125.50.127_____

What is the subnet number for the 2nd subnet? _____198.125.50.64_____

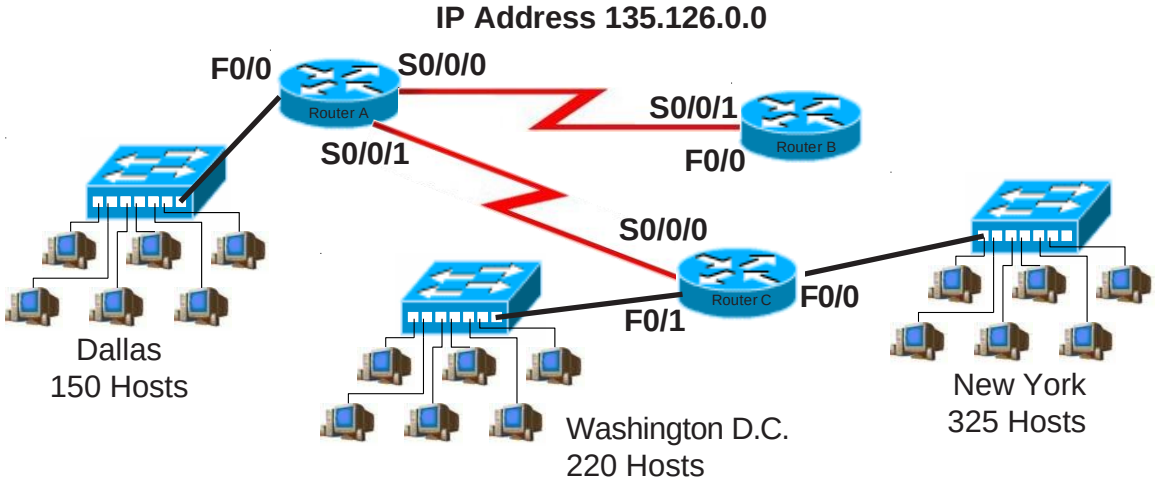
What is the subnet broadcast address for the 4th subnet? _____198.125.50.255_____

What are the assignable addresses for the 3rd subnet? _____198.125.50.129 - 198.125.50.190_____

Show your work for <u>Problem 12</u> in the space below.

Practical Subnetting 4

Based on the information in the graphic shown, design a network addressing scheme that will supply the **minimum number of subnets**, and allow enough extra subnets and hosts for 70% growth in all areas. Circle each subnet on the graphic and answer the questions below.



Address class _____B_____

Custom subnet mask ___255.255.240.0_____

Minimum number of subnets needed ___5_____

Extra subnets required for 70% growth (Round up to the next whole number) + ___4_____

Total number of subnets needed = ____9_____

Number of host addresses in the largest subnet group ___325_____

Number of addresses needed for 70% growth in the largest subnet (Round up to the next whole number) + ___228___

Total number of address needed for the largest subnet = ___553_____

Start with the first subnet and arrange your sub-networks from the largest group to the smallest.

IP address range for New York __135.126.0.0 – 135.126.15.255___

IP address range for Washington D. C. ___135.126.16.0 – 135.126.31.255_

IP address range for Dallas _135.126.32.0 – 135.126.37.255__

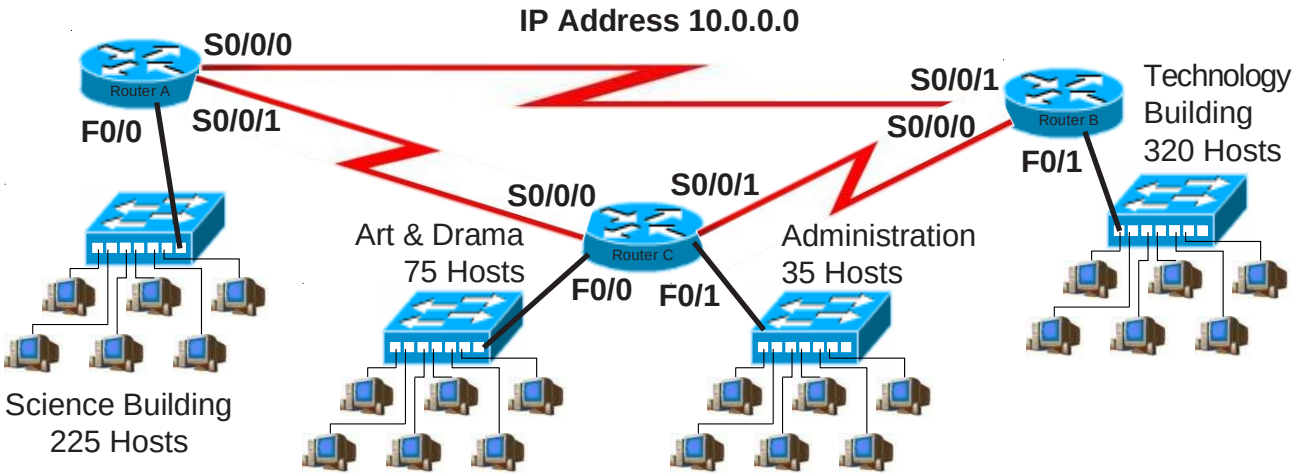
IP address range for Router A to Router B serial connection _135.126.48.0 - 135.126.63.255_

IP address range for Router A to Router C serial connection _135.126.64.0 - 135.126.79.255__

Show your work for <u>Problem 4</u> in the space below.

Practical Subnetting 6

Based on the information in the graphic shown, design a network addressing scheme that will supply the **minimum number of subnets**, and allow enough extra subnets and hosts for 20% growth in all areas. Circle each subnet on the graphic and answer the questions below.



Address class __A_____

Custom subnet mask ___250.240.0.0_____

Minimum number of subnets needed _____7_____

Extra subnets required for 20% growth + ____2_____
(Round up to the next whole number)

Total number of subnets needed = ____9_____

Start with the first subnet and arrange your sub-networks from the largest group to the smallest.

IP address range for Technology __10.0.0.0 - 10.15.255.255_____

IP address range for Science __10.16.0.0 – 10.31.255.255____

IP address range for Arts & Drama ___10.32.0.0 – 10.47.255.255____

IP Address range Administration ___10.48.0.0 – 10.63.255.255____

IP address range for Router A to Router B serial connection _10.64.0.0 – 10.79.255.255__

IP address range for Router A to Router C serial connection __10.80.0.0 – 10.95.255.255___

IP address range for Router B to Router C serial connection ___10.96.0.0 – 10.127.255.255_