# Visualizing Subnets Using
The Circle Method

The circle method is another method used to visualize the breakdown of subnets and addresses into smaller sizes.   By shading or coloring in the different sections of the circle you can easily break up your subnets without overlapping your addresses. You adjust each subnet to the correct size needed.
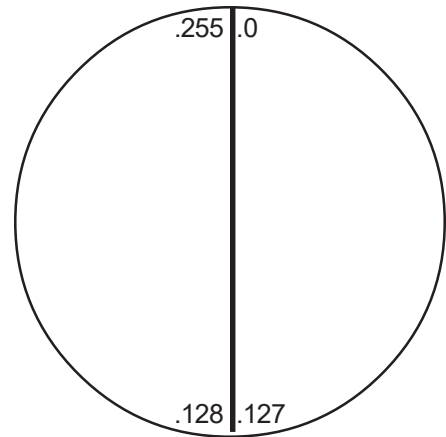
Start with a circle. The whole circle is a single subnet comprised of 256 addresses.
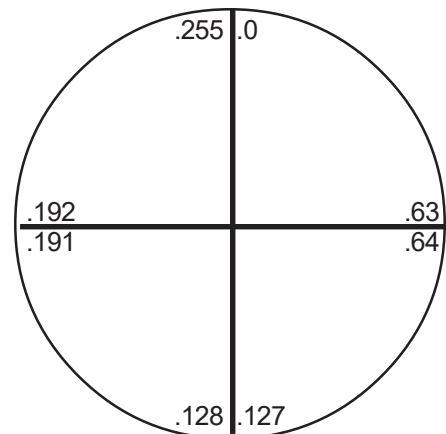
/24
255.255.255.0
256 Hosts
1 Subnet
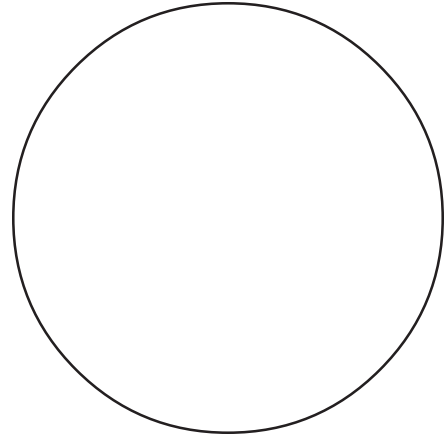
Split the circle in half and you get two subnets with 128 addresses.

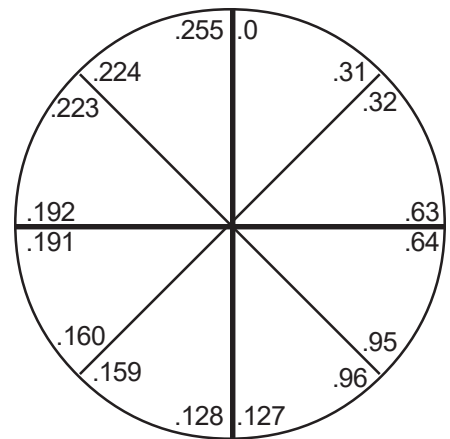.255 .0

/25
255.255.255.128
128 Hosts
2 Subnets

.128 .127

Divide the circle into quarters and you get four subnets with 64 addresses.

.255 .0

/26
255.255.255.192
64 Hosts
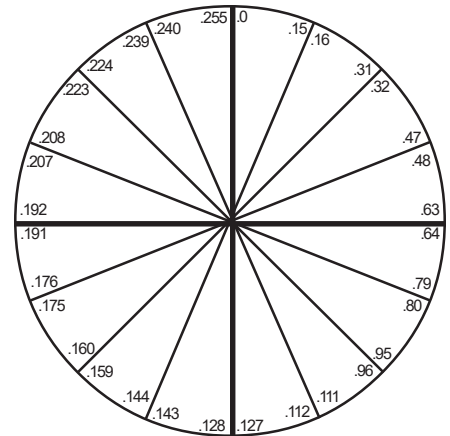4 Subnets

.192
.191

.63
.64

.128 .127

Split each quarter and you get eight subnets with 32 addresses.

/27
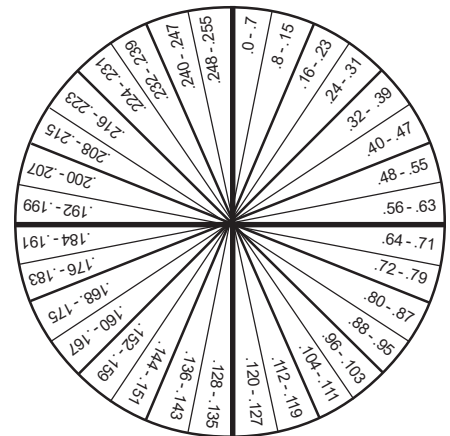255.255.255.224
32 Hosts
8 Subnets

Split the boxes in half again and you get sixteen subnets with sixteen addresses.

/28
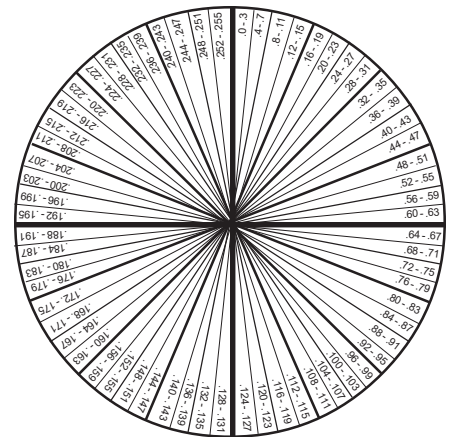255.255.255.240
16 Hosts
16 Subnets

The next split gives you thirty two subnets with eight addresses.

/29
255.255.255.248
8 Hosts
32 Subnets

The last split gives sixty four subnets with four addresses each.

/30
255.255.255.252
4 Hosts
64 Subnets

VLSM Addressing

Circle Method

(Sample)

Problem 9

Using the network diagram and information given create an addressing scheme which utilizes variable-length subnet masks. Show the subnet address and CIDR in the circle below, color or shade the sub-subnets used. This business will be using the class C address 220.10.10.0. Remember to start with your largest groups first.

Marketing
Department
60 Hosts

Research
Department
28 Hosts

LAN Address:

220.10.10.0/26

LAN Address:

220.10.10.64/27

Color in the necessary circle sections used with different shades to highlight each subnet.

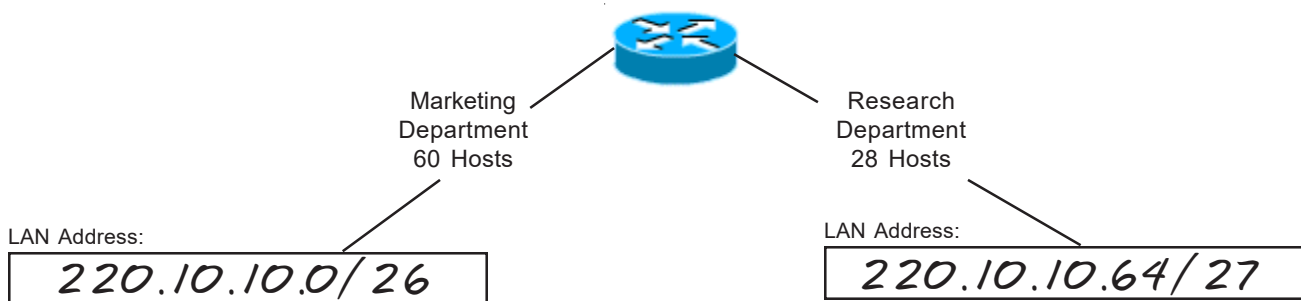.255 .0

.63

.64

.95

.96

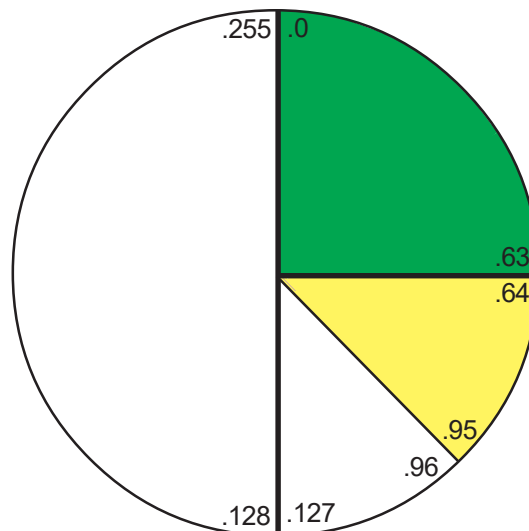.128 .127

VLSM Addressing

Circle Method

(Sample)

Problem 10

Using the network diagram and information given create an addressing scheme which utilizes variable-length subnet masks. Show the subnet address and CIDR in the circle below, color or shade the sub-subnets used. This company will be using the class C address 192.168.16.0. Remember to start with your largest groups first.

LAN Address:

Washington D.C.
120 Hosts

192.168.16.0/25

WAN Address #1:

192.168.16.224/30

WAN Address #2:

192.168.16.228/30

Baltimore
60 Hosts

Frederick
20 Hosts

LAN Address:

192.168.16.128/26

LAN Address:

192.168.16.192/27

Color in the necessary circle sections used with different shades to highlight each subnet.

.255 .0

.240

.228 - .231
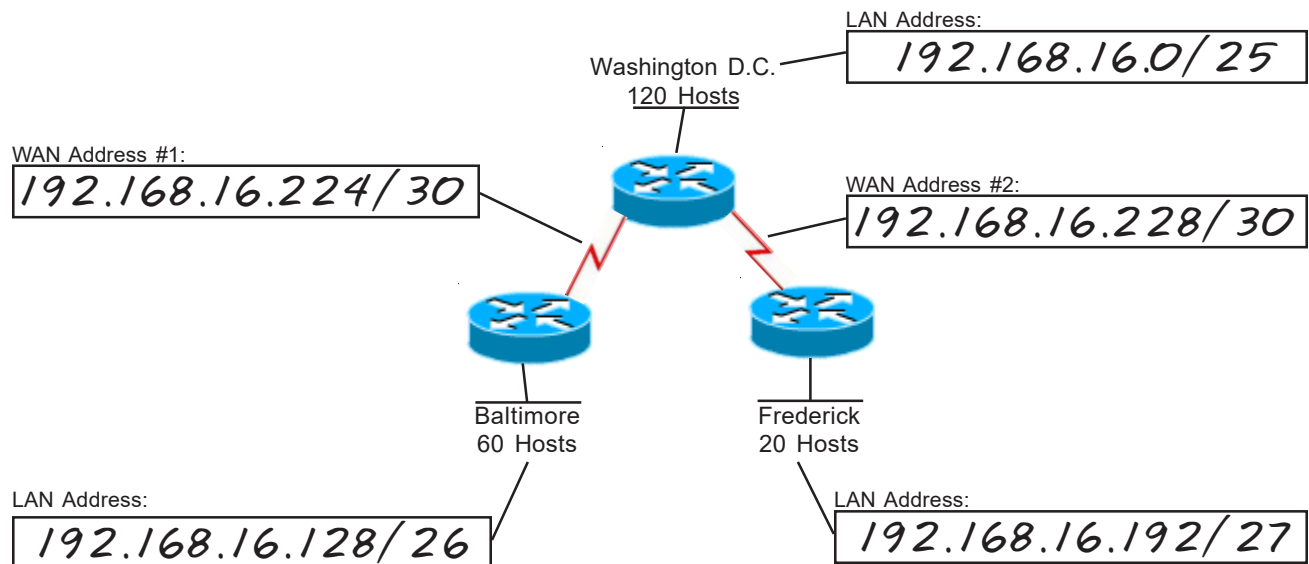
.224 - .227

.232 - .239

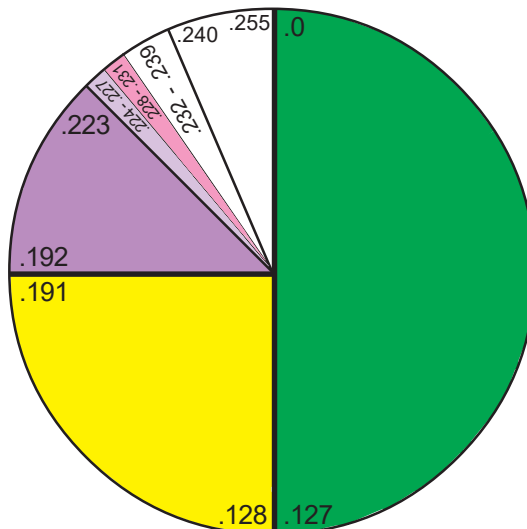.223

.192

.191

.128 .127

VLSM Addressing
Circle Method

Problem 11

Using the network diagram and information given create an addressing scheme which utilizes variable-length subnet masks. Show the subnet address and CIDR in the circle below, color or shade the sub-subnets used. This business will be using the class C address 200.20.20.0. Remember to start with your largest groups first.

LAN Address:

Marketing
Department
100 Hosts

Marketing
Department
50 Hosts

Department
25 Hosts

LAN Address:

LAN Address:

Color in the necessary circle sections used with different shades to highlight each subnet.

.255 .0
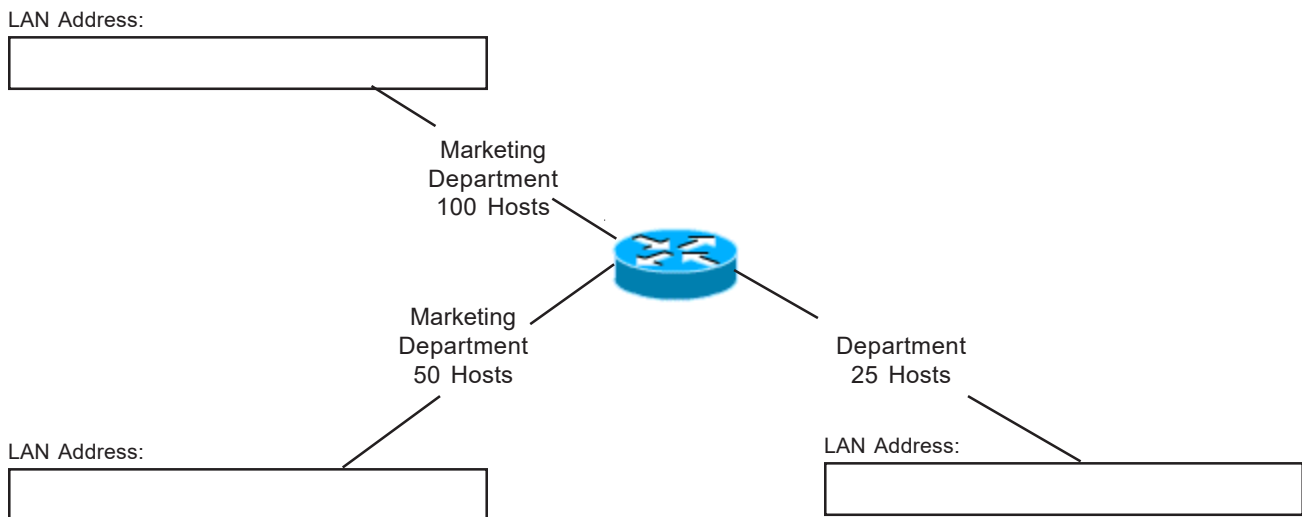
.224

.223

.192

.191

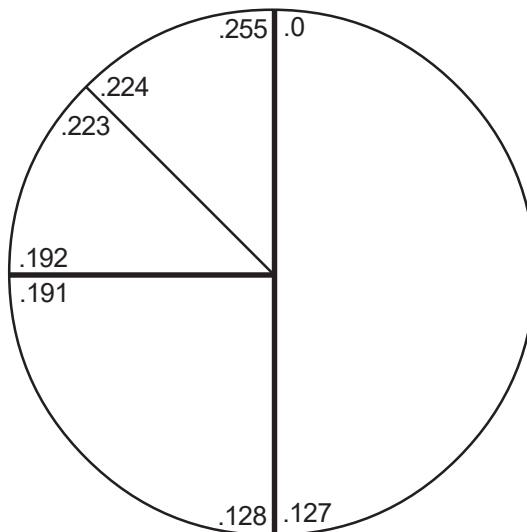.128 .127

VLSM Addressing
Circle Method

Problem 12

Using the network diagram and information given create an addressing scheme which utilizes variable-length subnet masks. Show the subnet address and CIDR in the circle below, color or shade the sub-subnets used. This company will be using the class C address 199.55.70.0. Remember to start with your largest groups first.

LAN Address:

WAN Address #1:

12 Hosts

Boston

New York

LAN Address:

21 Hosts

LAN Address:

115 Hosts

8 Hosts

LAN Address:

Color in the necessary circle sections used with different shades to highlight each subnet.
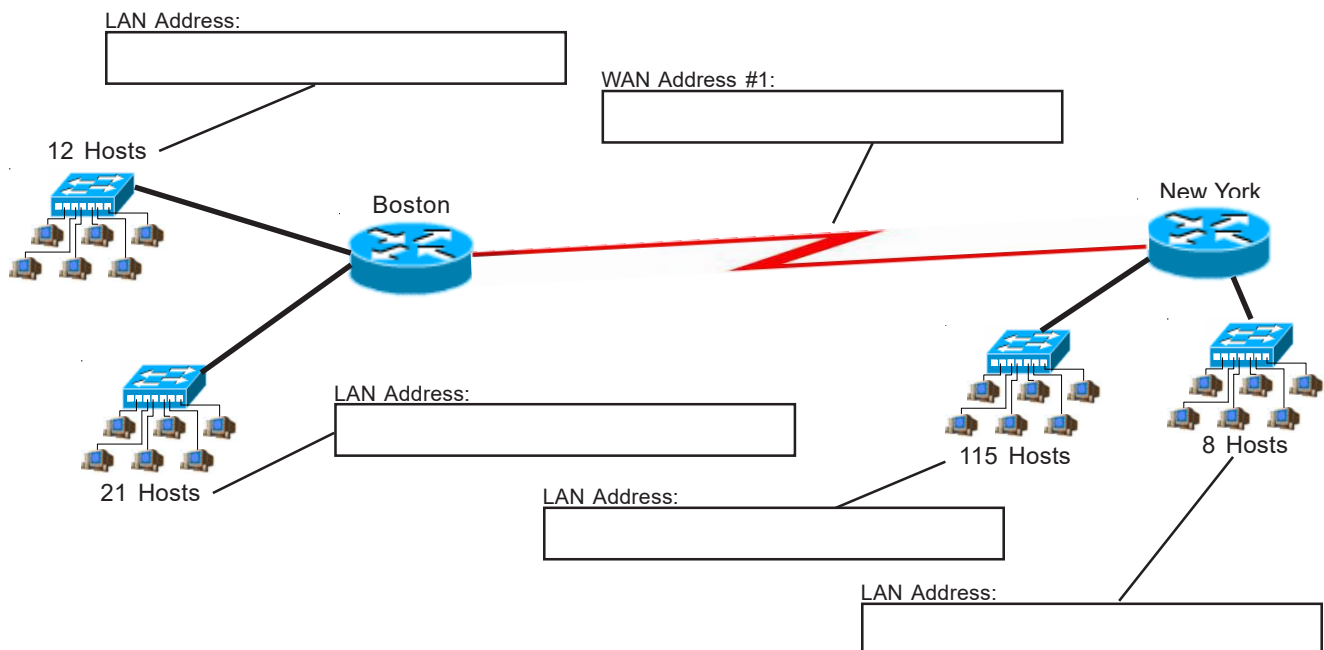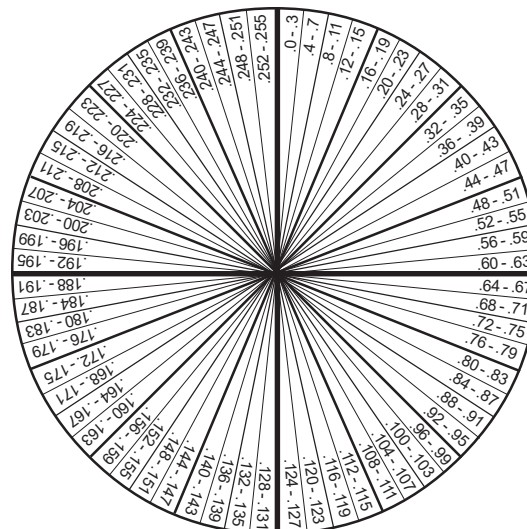
VLSM Addressing
Circle Method

Problem 13

Using the network diagram and information given create an addressing scheme which utilizes variable-length subnet masks. Show the subnet address and CIDR in the circle below, color or shade the sub-subnets used. This company will be using the class C address 200.150.70.0. Remember to start with your largest groups first.

Serial Address:

New Delhi

12Hosts

LAN Address:

35 Hosts

Mumbai

LAN Address:

LAN Address:

22 Hosts

7 Hosts

5 Hosts

LAN Address:

LAN Address:

Color in the necessary circle sections used with different shades to highlight each subnet.
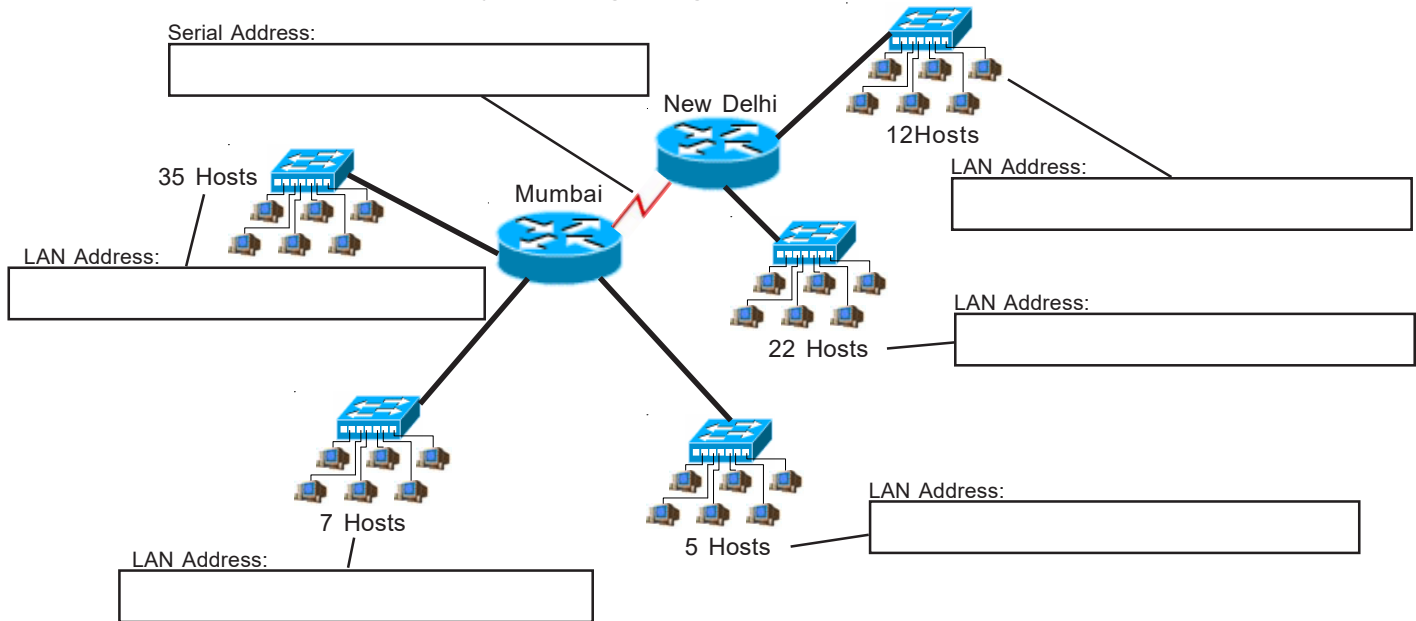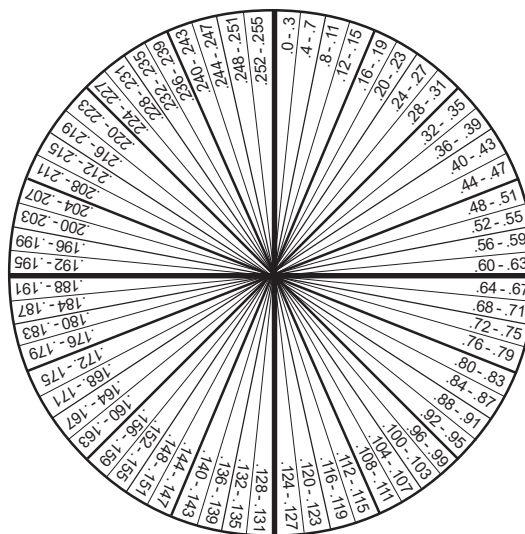
VLSM Addressing
Circle Method

Problem 14

Using the network diagram and information given create an addressing scheme which utilizes variable-length subnet masks. Show the subnet address and CIDR in the circle below, color or shade the sub-subnets used. This company will be using the class C address 210.10.10.0. Remember to start with your largest groups first.

LAN Address:

WAN Address #2:

WAN Address #1:

Beijing

Hong Kong

27 Hosts

Shanghai

18 Hosts   18 Hosts

95 Hosts

12 Hosts

LAN Address:

LAN Address:

LAN Address:

Draw the necessary lines and color in the used circle sections
with different shades to highlight each subnet.

.255 | .0

.224

.31

.223

.32

.192

.63

.191

.64

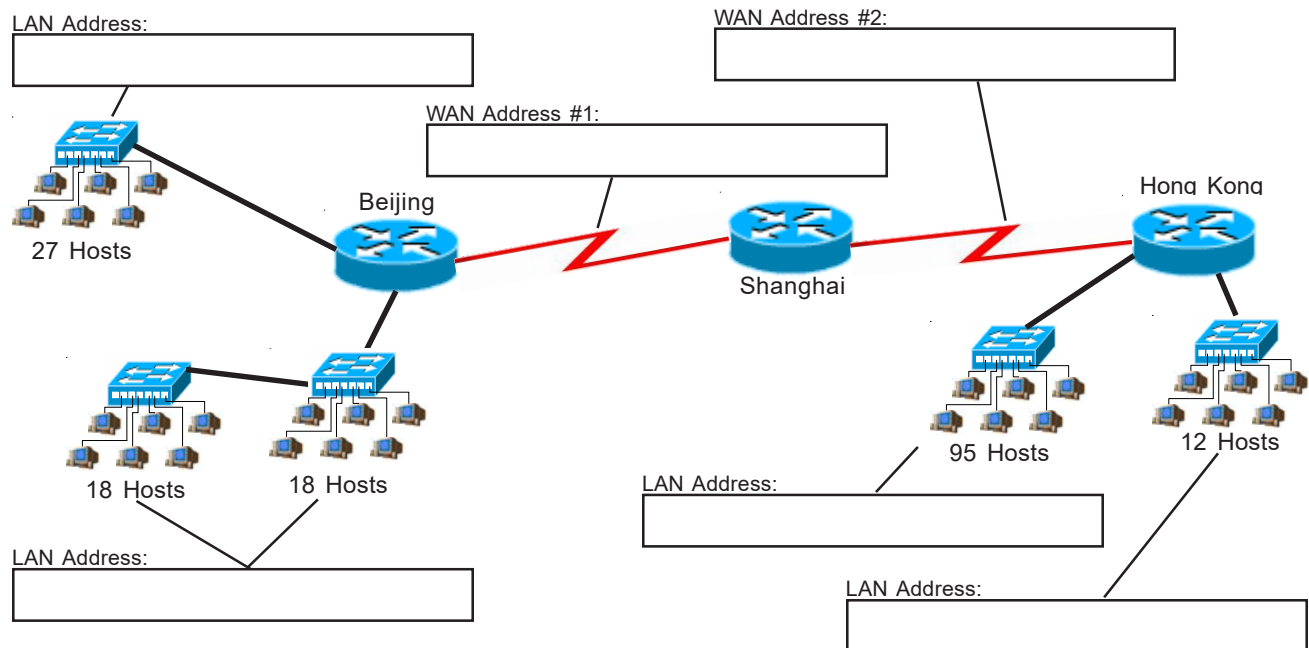.160

.95

.159

.96

.128 | .127
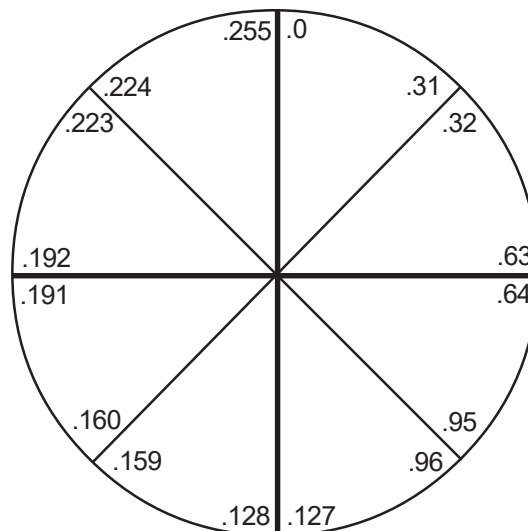
21

VLSM Addressing
Circle Method

Problem 15

Using the network diagram and information given create an addressing scheme which utilizes variable-length subnet masks. Show the subnet address and CIDR in the boxes below, color or shade the sub-subnets used in the circle. This company will be using the class C address 192.168.150.0. Remember to start with your largest groups first.

Vienna
15 Hosts

WAN Address #1:

LAN Address:

LAN Address:

WAN Address #2:

Prague

12 Hosts

LAN Address:

Frankfurt
30 Hosts

Venice
23 Hosts

WAN Address #3:

LAN Address:

Draw the necessary lines and color in the used circle sections with different shades to highlight each subnet.

48 Hosts

48 Hosts

LAN Address:
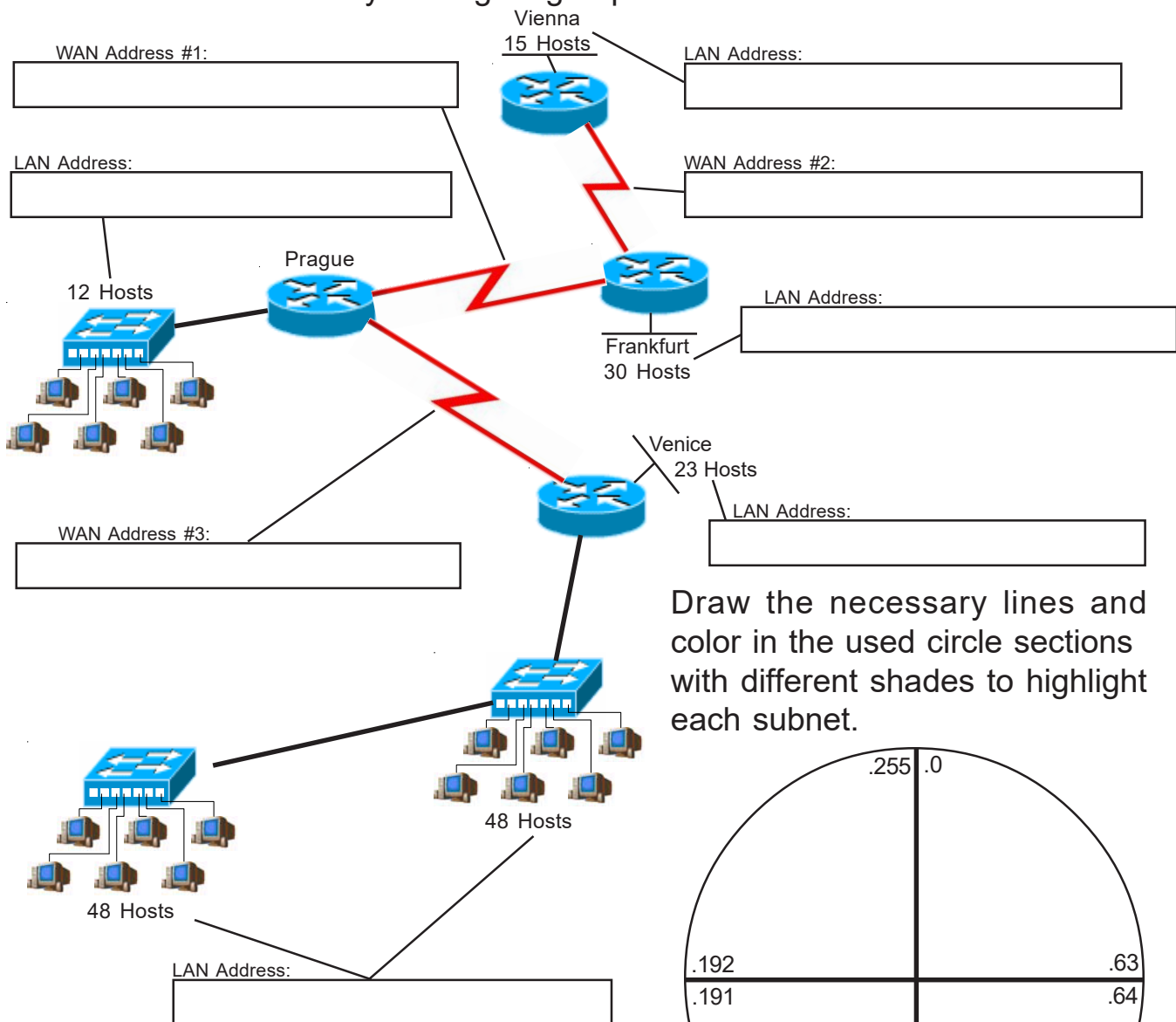
.255 | .0

.192

.63

.191

.64

.128 | .127

VLSM Addressing
Circle Method

Problem 16

Using the network diagram and information given create an addressing scheme which utilizes variable-length subnet masks. Show the subnet address and CIDR in the boxes below, color or shade the sub-subnets used in the circle. This company will be using the class C address 195.75.23.0. Remember to start with your largest groups first.

WAN Address #1:

WAN Address #2:

San Juan

Guatemala City

Kingston

LAN Address:

6 Hosts

WAN Address #3

24 Hosts

37 Hosts

San Jose

LAN Address:

LAN Address:

LAN Address:

Draw the necessary lines and color in the used circle sections with different shades to highlight each subnet.

12 Hosts

13 Hosts

12 Hosts

LAN Address:

.255 | .0

.128 | .127