Subnetting C Exercises

Problem #1

# of Subnets	3
# of Usable Hosts	50
Network Address	192.168.158.0
Address Class	
Default Subnet Mask	
Barrowed Bits	
Custom Subnet Mask	
Total Subnets	
Total Host Addresses per Subnet	
Usable Host Addresses per Subnet	

Networks	2	4	8	16	32	64		
Hosts	256	128	64	32	16	8	4	
Mask	128	192	224	240	248	252	254	255
Borrowed	1	2	3	4	5	6	7	8

__ . __ . __ .

| | 128 | 64 | 32 | 16 | 8 | 4 | 2 | 1 |

Net	Hosts											Net	Usable	Broad
1	50													
2	48													
3	15													

Subnetting C Exercises

Problem #1 - Answer

# of Subnets	3
# of Usable Hosts	50
Network Address	192.168.158.0
Address Class	C
Default Subnet Mask	255.255.255.0
Barrowed Bits	2
Custom Subnet Mask	255.255.255.192
Total Subnets	4
Total Host Addresses per Subnet	64
Usable Host Addresses per Subnet	62

Networks	2	4	8	16	32	64		
Hosts	256	128	64	32	16	8	4	
Mask	128	192	224	240	248	252	254	255
Borrowed	1	2	3	4	5	6	7	8
192.168.158.	128	64	32	16	8	4	2	1

First 3 Octets Omitted to Save Space

Net	Hosts										Net	Usable	Broad
1	50	0	0								.0	.1 - .62	.63
2	48	0	1								.64	.65 - .126	.127
3	15	1	0								.128	.129 - .190	.191

Subnetting C Exercises

Problem #2

# of Subnets	17
# of Usable Hosts	5
Network Address	192.168.54.0
Address Class	
Default Subnet Mask	
Barrowed Bits	
Custom Subnet Mask	
Total Subnets	
Total Host Addresses per Subnet	
Usable Host Addresses per Subnet	

Networks	2	4	8	16	32	64		
Hosts	256	128	64	32	16	8	4	
Mask	128	192	224	240	248	252	254	255
Borrowed	1	2	3	4	5	6	7	8

___ . ___ . ___ .

| | 128 | 64 | 32 | 16 | 8 | 4 | 2 | 1 |

Net	Hosts											Net	Usable	Broad
1	5													
2	4													
3	4													
4	4													
5	2													
6	2													
7	2													
8	2													
9	2													
10	2													
11	2													
12	2													
13	2													
14	2													
15	2													
16	2													
17	2													

Subnetting C Exercises

Problem #2 - Answer

# of Subnets	17
# of Usable Hosts	5
Network Address	192.168.54.0
Address Class	C
Default Subnet Mask	255.255.255.0
Barrowed Bits	5
Custom Subnet Mask	255.255.255.248
Total Subnets	32
Total Host Addresses per Subnet	8
Usable Host Addresses per Subnet	6

Networks	2	4	8	16	32	64		
Hosts	256	128	64	32	16	8	4	
Mask	128	192	224	240	248	252	254	255
Borrowed	1	2	3	4	5	6	7	8
192.168.54.	128	64	32	16	8	4	2	1

Net	Hosts									Net	Usable	Broad
1	5	0	0	0	0	0				.0	.1 - .6	.7
2	4	0	0	0	0	1				.8	.9 - .14	.15
3	4	0	0	0	1	0				.16	.17 - .22	.23
4	4	0	0	0	1	1				.24	.25 - .30	.31
5	2	0	0	1	0	0				.32	.33 - .38	.39
6	2	0	0	1	0	1				.40	.41 – .46	.47
7	2	0	0	1	1	0				.48	.49 - .54	.55
8	2	0	0	1	1	1				.56	.57 - .62	.63
9	2	0	1	0	0	0				.64	.65 - .70	.71
10	2	0	1	0	0	1				.72	.73 - .78	.79
11	2	0	1	0	1	0				.80	.81 - .86	.87
12	2	0	1	0	1	1				.88	.89 - .94	.95
13	2	0	1	1	0	0				.96	.97 - .102	.103
14	2	0	1	1	0	1				.104	.105 - .110	.111
15	2	0	1	1	1	0				.112	.113 - .118	.119
16	2	0	1	1	1	1				.120	.121 - .126	.127
17	2	1	0	0	0	0				.128	.129 - .134	.135

Subnetting C Exercises

Problem #3

# of Subnets	2
# of Usable Hosts	120
Network Address	192.168.101.0
Address Class	
Default Subnet Mask	
Barrowed Bits	
Custom Subnet Mask	
Total Subnets	
Total Host Addresses per Subnet	
Usable Host Addresses per Subnet	

Networks	2	4	8	16	32	64		
Hosts	256	128	64	32	16	8	4	
Mask	128	192	224	240	248	252	254	255
Borrowed	1	2	3	4	5	6	7	8

___ . ___ . ___ .

| | 128 | 64 | 32 | 16 | 8 | 4 | 2 | 1 |

Net	Hosts										Net	Usable	Broad
1	120												
2	54												

Subnetting C Exercises

Problem #3 - Answer

# of Subnets	2
# of Usable Hosts	120
Network Address	192.168.101.0
Address Class	C
Default Subnet Mask	255.255.255.0
Barrowed Bits	1
Custom Subnet Mask	255.255.255.128
Total Subnets	2
Total Host Addresses per Subnet	128
Usable Host Addresses per Subnet	126

Networks	2	4	8	16	32	64		
Hosts	256	128	64	32	16	8	4	
Mask	128	192	224	240	248	252	254	255
Borrowed	1	2	3	4	5	6	7	8
192.168.101.	___	___	___	___	___	___	___	___
	128	64	32	16	8	4	2	1

Net	Hosts										Net	Usable	Broad
1	120	0									.0	.1 - .126	.127
2	54	1									.128	.129 - .254	.255

Subnetting C Exercises

Problem #4

# of Subnets	10
# of Usable Hosts	14
Network Address	192.168.10.0
Address Class	
Default Subnet Mask	
Barrowed Bits	
Custom Subnet Mask	
Total Subnets	
Total Host Addresses per Subnet	
Usable Host Addresses per Subnet	

Networks	2	4	8	16	32	64		
Hosts	256	128	64	32	16	8	4	
Mask	128	192	224	240	248	252	254	255
Borrowed	1	2	3	4	5	6	7	8

__ . __ . __ .

128	64	32	16	8	4	2	1

Net	Hosts									Net	Usable	Broad
1	14											
2	12											
3	10											
4	10											
5	8											
6	2											
7	2											
8	2											
9	2											
10	2											

Subnetting C Exercises

Problem #4 - Answer

# of Subnets	10
# of Usable Hosts	14
Network Address	192.168.10.0
Address Class	C
Default Subnet Mask	255.255.255.0
Barrowed Bits	4
Custom Subnet Mask	255.255.255.240
Total Subnets	16
Total Host Addresses per Subnet	16
Usable Host Addresses per Subnet	14

Networks	2	4	8	16	32	64		
Hosts	256	128	64	32	16	8	4	
Mask	128	192	224	240	248	252	254	255
Borrowed	1	2	3	4	5	6	7	8
192.168.10.	128	64	32	16	8	4	2	1

Net	Hosts									Net	Usable	Broad
1	14	0	0	0	0					.0	.1 - .14	.15
2	12	0	0	0	1					.16	.17 - .30	.31
3	10	0	0	1	0					.32	.33 - .46	.47
4	10	0	0	1	1					.48	.49 - .62	.63
5	8	0	1	0	0					.64	.65 - .78	.79
6	2	0	1	0	1					.80	.81 - .94	.95
7	2	0	1	1	0					.96	.97 - .110	.111
8	2	0	1	1	1					.112	.113 - .126	.127
9	2	1	0	0	0					.128	.129 - .142	.143
10	2	1	0	0	1					.144	.145 - .158	.159