

Introduction to Networks and Distributed Computing
CECS 327
Spring 2022
Due Date: Friday, April 3, 2022 @ 10:00 PM PST

Assignment 3: Subnetting

Instructions For all problems:

- This is individual assignment
- Use the Subnetting Worksheet to show and record all work for each problem.
- You must explain your conversion below each table. Failure to explain your results will make you lose points.

Problem 1

Host IP Address	172.30.1.33
Major Network Mask	255.255.0.0
Major (Base) Network Address	
Major Network Broadcast Address	
Total Number of Host Bits Number of Hosts	
Subnet Mask	255.255.255.0
Number of Subnet Mask Bits Number of Usable Subnets Bits Maximum Subnets	
Number of Host Bits per Subnet Number of Usable Hosts per Subnet	
Subnet Address for this IP Address	
IP Address of First Host on this Subnet	
IP Address of Last Host on this Subnet	
Broadcast Address for this Subnet	

Problem 2

Host IP Address	172.30.1.33
Major Network Mask	255.255.255.0
Major (Base) Network Address	
Major Network Broadcast Address	
Total Number of Host Bits Number of Hosts	
Subnet Mask	255.255.255.252
Number of Subnet Mask Bits Number of Usable Subnets Bits Maximum Subnets	
Number of Host Bits per Subnet Number of Usable Hosts per Subnet	
Subnet Address for this IP Address	
IP Address of First Host on this Subnet	
IP Address of Last Host on this Subnet	
Broadcast Address for this Subnet	

Problem 3

Host IP Address	192.192.10.234
Major Network Mask	255.255.255.0
Major (Base) Network Address	
Major Network Broadcast Address	
Total Number of Host Bits Number of Hosts	
Subnet Mask	255.255.255.248
Number of Subnet Bits Number of Usable Subnets (zero subnet used)	
Number of Host Bits per Subnet Number of Usable Hosts per Subnet	
Subnet Address for this IP Address	
IP Address of First Host on this Subnet	
IP Address of Last Host on this Subnet	
Broadcast Address for this Subnet	

Problem 4

Host IP Address	171.68.99.71
Major Network Mask	255.255.0.0
Major (Base) Network Address	171.68.0.0
Major Network Broadcast Address	171.68.255.255
Total Number of Host Bits Number of Hosts	16 65,536 -2
Subnet Mask	255.255.240.0
Number of Subnet Mask Bits Number of Usable Subnets Bits Maximum Subnets	20 4 16
Number of Host Bits per Subnet Number of Usable Hosts per Subnet	12 4,096 -2 = 4094
Subnet Address for this IP Address	171.68.96.0
IP Address of First Host on this Subnet	171.168.96.1
IP Address of Last Host on this Subnet	171.68.111.254
Broadcast Address for this Subnet	171.68.111.255

Problem 5

Host IP Address	217.200.3.219
Major Network Mask	255.255.255.0
Major (Base) Network Address	
Major Network Broadcast Address	
Total Number of Host Bits Number of Hosts	
Subnet Mask	255.255.255.224
Number of Subnet Mask Bits Number of Usable Subnets Bits Maximum Subnets	
Number of Host Bits per Subnet Number of Usable Hosts per Subnet	
Subnet Address for this IP Address	
IP Address of First Host on this Subnet	
IP Address of Last Host on this Subnet	
Broadcast Address for this Subnet	