SE331: Introduction to Computer Networks	**Recitation 8**
Semester 1 5785	**1 January 2025**
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Subnetting

1 Subnet Routing

SubnetNumber	SubnetMask	NextHop
128.96.170.0	255.255.254.0	Interface 0
128.96.168.0	255.255.254.0	Interface 1
128.96.166.0	255.255.254.0	R2
128.96.164.0	255.255.252.0	R3
<Default>		R4

Suppose a router has built up the routing table shown in the table above. The router can deliver packets directly over interfaces 0 and 1, or it can forward packets to routers R2, R3, or R4. Assume the router does the longest prefix match. Describe what the router does with a packet addressed to each of the following destinations:

(a) 128.96.171.92

(b) 128.96.167.151

(c) 128.96.163.151

(d) 128.96.169.192

(e) 128.96.165.121

2 Subnet Routing

SubnetNumber	SubnetMask	NextHop
212.4.94.128	255.255.255.224	R1
212.4.92.0	255.255.252.0	R2
212.4.88.0	255.255.248.0	R3
212.4.80.0	255.255.240.0	R4
<Default>		R5

Suppose a router has built up the routing table shown in the table above. The router can forward packets to routers R1, R2, R3, R4, or R5. Which next hop will the router choose for packets addressed to the following IP addresses?

(a) 212.4.85.126

(b) 212.4.94.100

Show your calculations.

3 Subnetting Assignment

An organization has a class C network 200.1.1.X and wants to form subnets for four departments, with hosts as follows:

A	72 hosts
B	35 hosts
C	20 hosts
D	18 hosts

There are 145 hosts in all.

Create a possible arrangements for subnets to make this possible and use them to fill in the following table:

Name	Subnet Number	Subnet Mask	IP Address Range
A			
B			
C			
D			

