CS 428/528

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Quiz 4

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1. Write down the binary representation of the address block 200.24.16.0/23 and clearly underline the subnet part? **(2 points)**

Answer)

200	24	16	0	
11001000	00011000	00010000	00000000	
11001000	00011000	00010000	00000000	← first 23 bits are the subnet mask

2. What is the primary task of DHCP? **(1 point)**

Answer)

DHCP is connectionless so the primary task is to allocate IP's to host's dynamically.

3. What is the difference between routing and forwarding? **(1 point)**

Answer)

Routing: algorithm to figure out how to reach any other node and populates the forwarding table

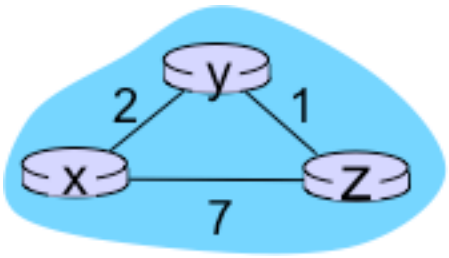
Forwarding: algorithm determines local forwarding at that individual router, meaning which datagram should be sent to which port.

4. What is the primary function of NAT? **(1 point)**

Answer)

The primary function is to translate a datagram's internal IP (LAN) to external (WAN)

5. Use Dijkstra's algorithm to find the shortest path from x to all other nodes in the network. Draw a table similar to the one done is class. **(3 points)**



Step	N'	D(y) p(y)	D(z) p(z)
0	**x**	**2, x**	**7, x**
1	**xy**	**-**	**3, y**
2	**xyz**	**-**	**-**

6. Convert 18.200.15.67 to binary **(2 points)**

Answer)

18 200 15 67

00010010 11001000 00001111 01000011