

Homework 6

Due date: 2020/1/3 (Fri) 13:10

Submission: R508, **No late submission allowed.**

1. (20%)

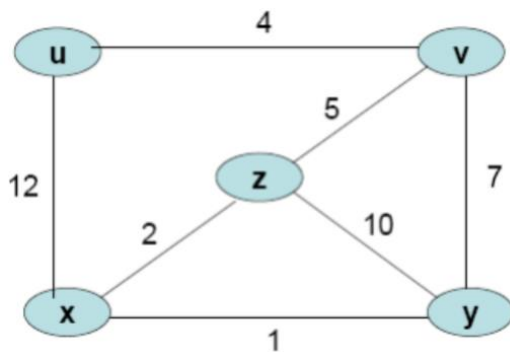
What is the difference between routing and forwarding?

Forwarding: Looking up for destination in routing table.

Routing: construction of routing table (Algorithms or protocols that is used to build the routing table) at each switch/router in the network.

2. (20%)

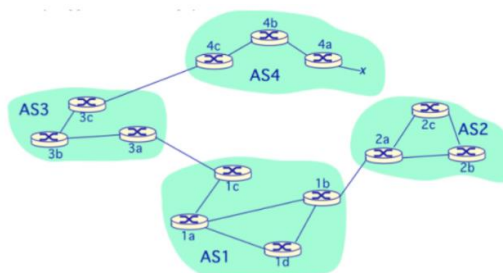
Consider the network shown below, and assume that each node initially knows the costs to each of its neighbors. Consider the distance vector algorithm and show the distance table entries at node z.



From\to	u	v	x	y	z
z	9	5	2	3	0

3. (30%)

Consider the network shown below. Suppose AS3 and AS2 are running OSPF for their intra-AS routing protocol. Suppose AS1 and AS4 are running RIP for their intra-AS routing protocol. Suppose eBGP and iBGP are used for the inter-AS routing protocol. Initially suppose there is no physical link between AS2 and AS4.



a. Router 3c learns about prefix X from which routing protocol?

eBGP

- b. Router 3a learns about X from which routing protocol?

iBGP

- c. Router 1c learns about X from which routing protocol?

eBGP

4. (20%)

- a. What is the Head-of-the-Line (HOL) blocking?

Head-of-line blocking (HOL blocking) in computer networking is a performance-limiting phenomenon that occurs when a line of packets is held up by the first packet. Examples include input buffered network switches, out-of-order delivery and multiple requests in HTTP pipelining.

- b. Draw a figure to show it.

