Question 1

1 pts

A router has the following (CIDR) entries in its routing table. Which interface does the router send if a packet with address 135.46.58.14 arrives?

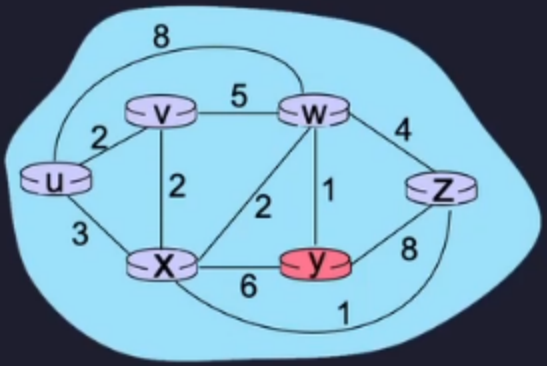
Address / Mask	Next hop
135.46.124.0/22	Interface 0
135.46.56.0/22	Interface 1
135.53.40.0/23	Interface 2
default	Interface 3

- ○ Interface 2
- ◉ Interface 1
- ○ Interface 0
- ○ Interface 3

Question 2

1 pts

Consider the network shown below, and Dijkstra's link-state algorithm. Here, we are interested in computing the least cost path from node *y* (note: *not* node u!) to all other nodes using Dijkstra's algorithm. Using the algorithm statement used in the textbook and its visual representation, complete the first row in the table below showing the link state algorithm's execution by matching the table entries (a), (b), (c), (d), and (e) with their values.



Step	N'	u D(u),p(u)	v D(v),p(v)	w D(w),p(w)	x D(x),p(x)	z D(z),p(z)
0	y	∞	*	*	*	*
1	*	*	*	1,y	*	*
2	(a)	(b)	(c)	1,y	(d)	(e)

2	(a)	(b)	(c)	1,y	(d)	(e)

(a) ywx

(b) 6,x

(c) 5,x

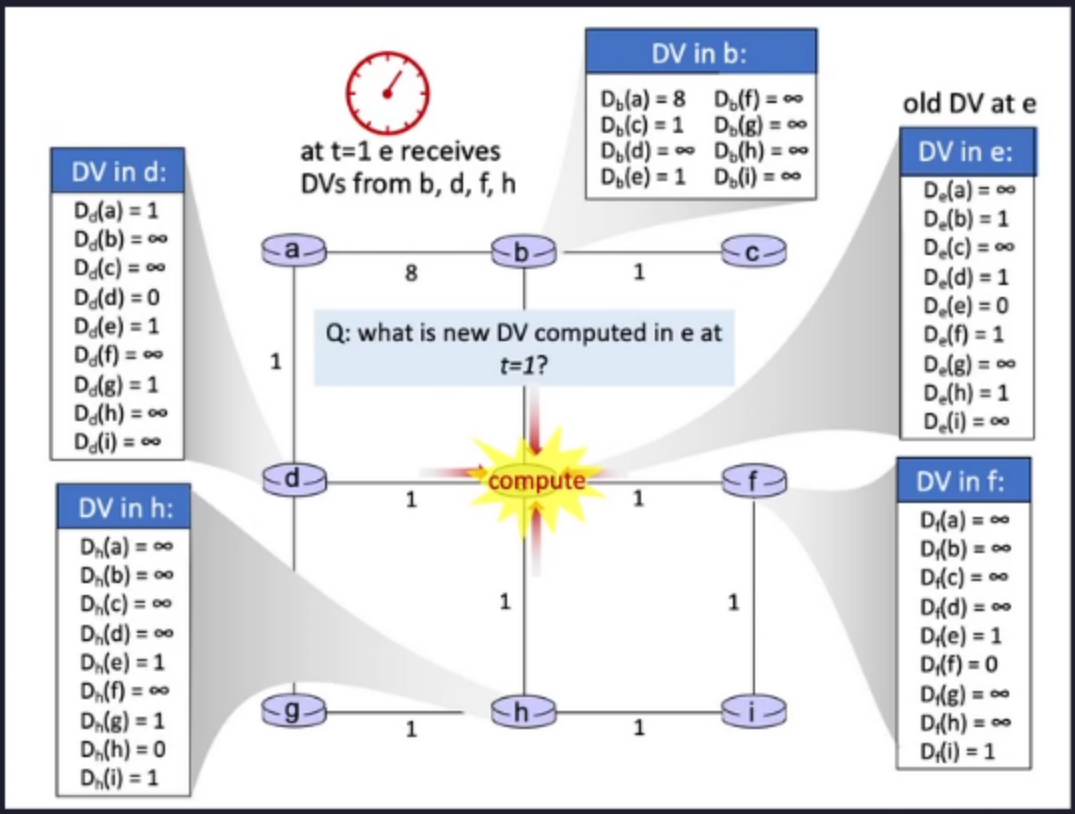
(d) 3,w

(e) 4,x

Question 3

1 pts

Consider the scenario shown below, where at t=1, node e receives distance vectors from neighboring nodes d, b, h and f. The (old) distance vector at e (the node at the center of the network) is also shown, **before** receiving the new distance vector from its neighbors. Indicate which of the components of **new** distance vector at e below have a value of **1** after e has received the distance vectors from its neighbors and updated its own distance vector.



- [ ] $D_e(g)$
- [x] $D_e(f)$
- [x] $D_e(d)$
- [ ] $D_e(c)$
- [x] $D_e(h)$
- [x] $D_e(b)$
- [ ] $D_e(i)$
- [ ] $D_e(a)$

Question 4

1 pts

Consider the network shown below. Suppose AS1, AS2, AS3, and AS4 are running OSPF for their intra-AS routing protocol and that all links have a weight of 1. Now suppose the link between 2a and 4a is up, and that paths to x via AS2 and AS4 are known with AS1. Hot potato routing is used in conjunction with iBGP within an AS for determining the outgoing border router to use. Indicate which one of the statements below are true.

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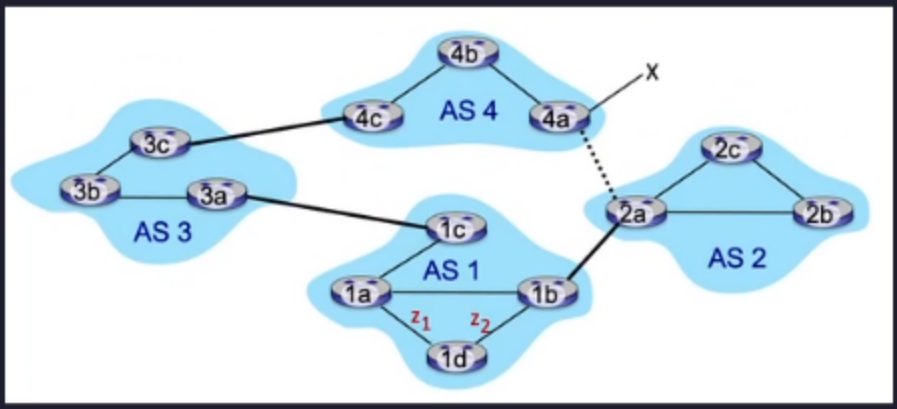
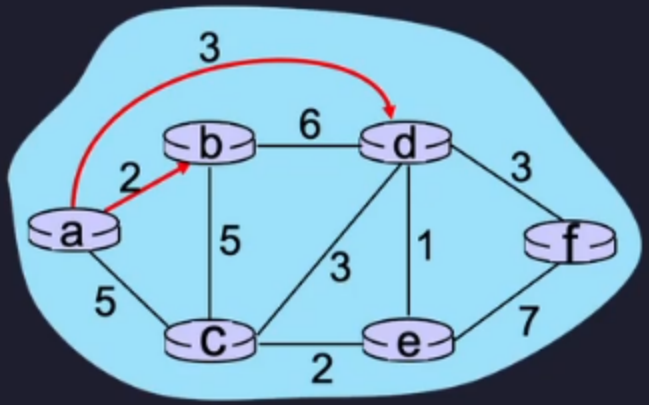


- [x] 1d will forward along z1 since OSPF has computed the path to 1c is via z1.
- [ ] 1d will forward along 1 or z2, since a hot potato can be thrown in any direction.
- [ ] 1d will forward along z2 since 1d has a shorter intra-domain path to border router 1b than to border router 1c, and hot potato routing is used.
- [ ] 1d will forward along z1 since that was the path used initially.

Question 5

1 pts

Consider the graph shown below and the use of Dijkstra's algorithm to compute a least cost path from a to all destinations. Suppose that nodes b and d have already been added to N'. What is the next node to be added to N'



- c
- e
- f

Question 6

1 pts

Check the one or more of the following statements about the OSPF protocol that are true.

- [ ] The Open Shortest Path First (OSPF) Internet routing protocol implements a Bellman-Ford distance-vector routing algorithm.
- [x] OSFP uses a Dijkstra-like algorithm to implement least cost path routing.
- [x] OSPF implements hierarchical routing
- [ ] OSPF is an interdomain routing protocol.
- [x] OSPF is an intra-domain routing protocol.

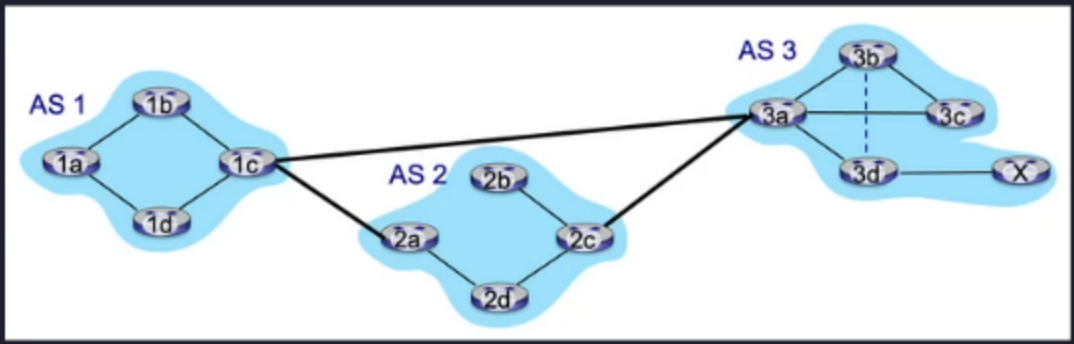
◂ Previous

Next ▸

Question 7

1 pts

Consider routers 2c and 2d in Autonomous System AS2 in the figure below. Indicate the flavor of BGP and the router from which each of 2c and 2d learns about the path to destination x.



How does router 2c learn the path AS3, X to destination network X?

From 3a via eBGP.

How does router 2d learn the path AS3, X to destination network X?

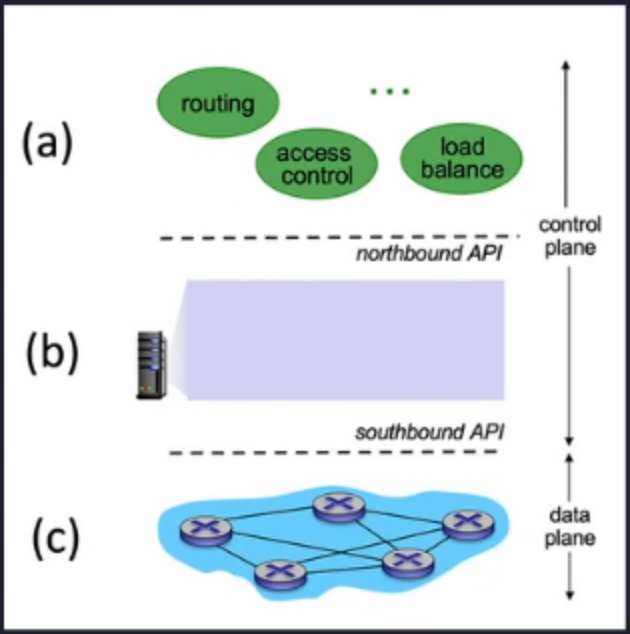
From 2c via iBGP.

This Quiz Will Be Submitted In One Minute

Question 8

1 pts

Consider the SDN layering shown below. Match each layer name below with a layer label (a), (b) or (c) as shown in the diagram.

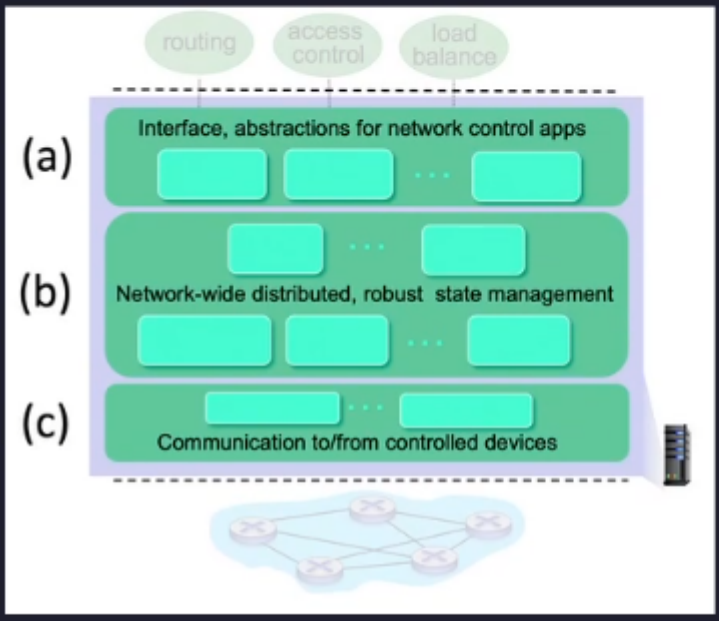


SDN Controller (network operating system)	(b)
SDN-controlled switches	(c)
Network-control applications	(a)

Questi

1 pts

Which of the functions below belong in the controller layer labeled "Communication to/from controlled device"?



- Switch information
- Network graph
- Intent
- Host information
- OpenFlow protocol
- Link-state information
- Flow tables
- Statistics

Question 10

1 pts

Which of the statements below about ICMP are true?

- [x] ICMP messages are carried in UDP segments using port number 86.
- [x] ICMP messages are carried directly in IP datagrams rather than as payload in UDP or TCP segments.
- [x] The TTL-expired message type in ICMP is used by the traceroute program.
- [ ] ICMP is used by hosts and routers to communicate network-level information.
- [ ] ICMP communicates information between hosts and routers by marking bits in the IP header.

Quiz results are protected for this quiz and are not visible to students.

ⓘ Correct answers are hidden.

Score for this quiz: **8.33** out of 10