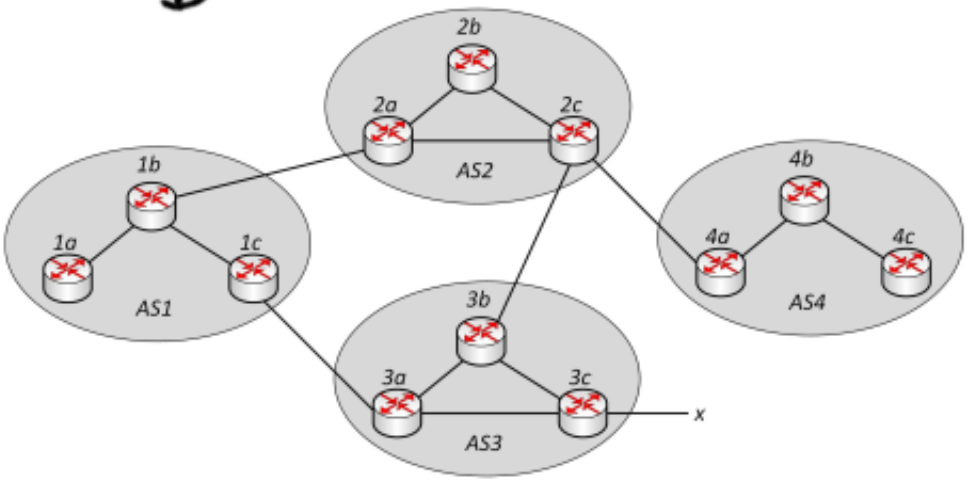
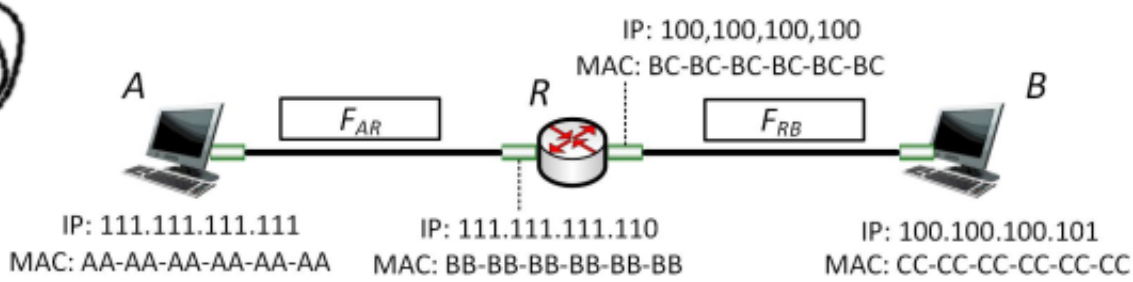
8. (**Single answer**) Consider the network shown below. Suppose that AS1 and AS2 are running RIP for their intra-AS routing protocol. Suppose that AS3 and AS4 are running OSPF for their intra-AS routing protocol. Further assume that eBGP and iBGP are used for the inter-AS routing protocol. Which of the following statement is correct? (D)



- (A) Router $2b$ learns about prefix x from RIP.
- (B) Router $1a$ learns about prefix x from RIP.
- (C) Router $3a$ learns about prefix x from eBGP.
- (D) Router $4b$ learns about prefix x from iBGP.

9. (**Multiple answers**) Consider the following network. Suppose that host A sends a datagram to host B through router R, which results in link-layer frame F_{AR} sent from A to R and frame F_{RB} sent from R to B.



Which of the following statement about frames F_{AR} and F_{RB} are correct? ( )

- (A) Frame F_{AR} has source IP address `111.111.111.111` and destination IP address `100.100.100.101`, and frame F_{RB} has source IP address `100.100.100.100` and destination IP address `100.100.100.101`.
- (B) Frame F_{AR} has source IP address `111.111.111.111` and destination IP address `100.100.100.101`, and frame F_{RB} has source IP address `111.111.111.111` and destination IP address `100.100.100.101`.
- (C) Frame F_{AR} has source MAC address `AA-AA-AA-AA-AA-AA` and destination MAC address `BB-BB-BB-BB-BB-BB`, and frame F_{RB} has source MAC address `BC-BC-BC-BC-BC-BC` and destination MAC address `CC-CC-CC-CC-CC-CC`.
- (D) Frame F_{AR} has source MAC address `AA-AA-AA-AA-AA-AA` and destination MAC address `CC-CC-CC-CC-CC-CC`, and frame F_{RB} has source MAC address `BC-BC-BC-BC-BC-BC` and destination MAC address `CC-CC-CC-CC-CC-CC`.