

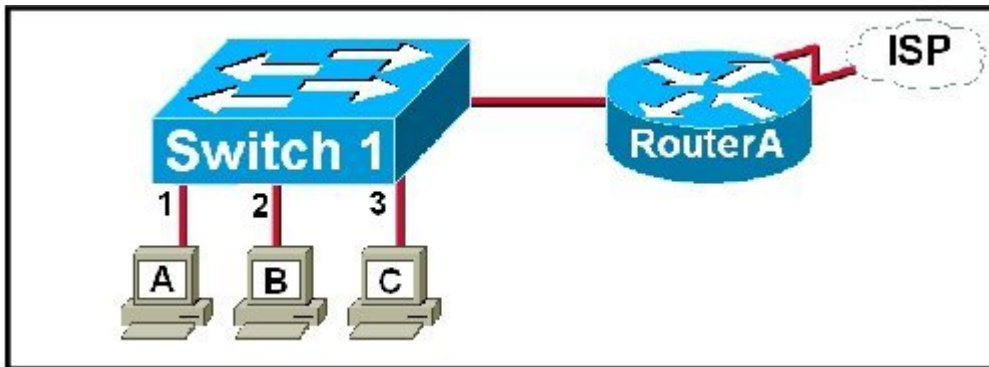
1 What type of routing is it when the network administrator manually configures a route?

- static
  - dynamic
  - interior
  - exterior
- 

2 A user initiates three simultaneous FTP connections from the local host to the same FTP server. Which OSI layer is responsible for establishing and managing these different FTP connections?

- application
  - session
  - transport
  - network
  - data link
- 

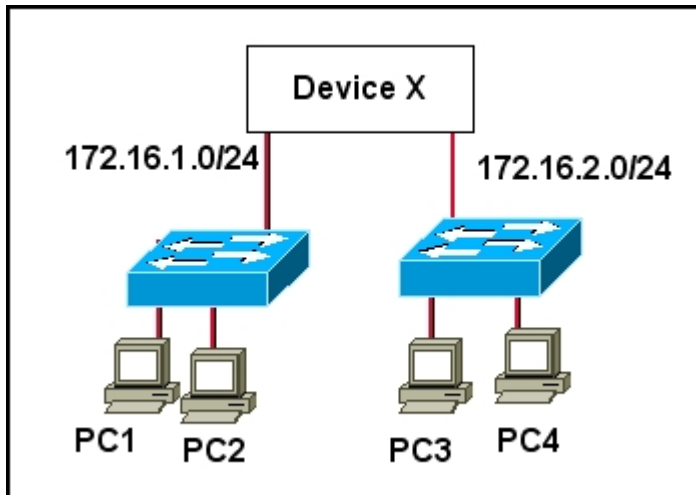
3



Refer to the exhibit. A network administrator is testing a connectivity issue in the network. The administrator discovers that host A cannot communicate with host B, host C, or RouterA. A ping command on host A to 127.0.0.1 succeeds. The NIC link indicator on host A is illuminated. Temporarily, the administrator removes the cable from host A and uses the LAN cable from host B to connect from host A to port 1 on the switch. While using the substitute cable, host A can communicate with host C and RouterA. At which layer of the OSI model was the problem occurring?

- session
  - transport
  - network
  - data link
  - physical
- 

4

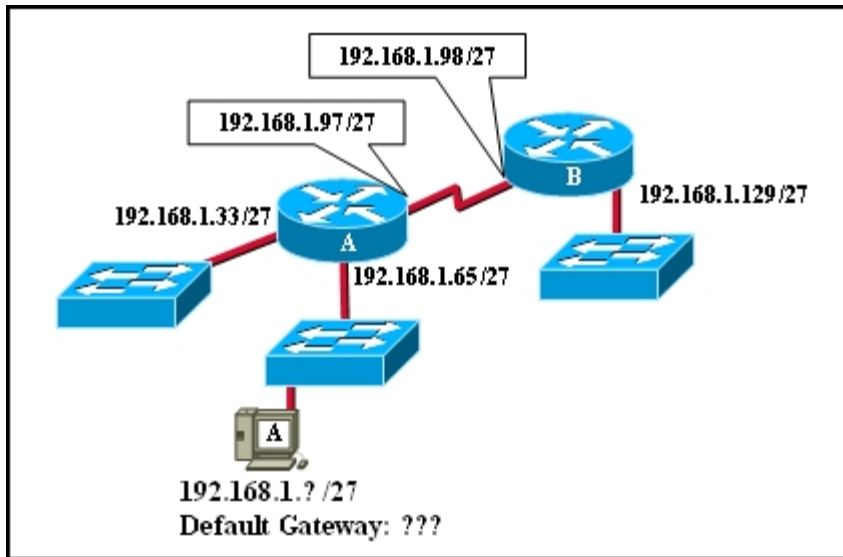


Refer to the exhibit. What device does *Device X* represent in the graphic to allow PC1 to ping PC4?

- hub
- router
- bridge
- access point
- Layer 2 switch

5 Which technologies are considered to be WAN technologies? (Choose two.)

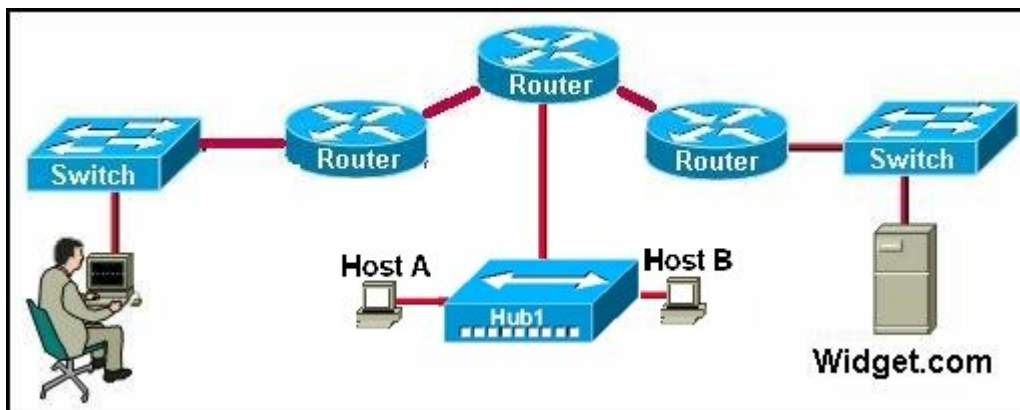
- Ethernet
- DSL
- Token Ring
- Frame Relay
- FDDI



Refer to the exhibit. Host A is being manually configured for connectivity to the LAN. Which two addressing scheme combinations are possible configurations that can be applied to the host for connectivity? (Choose two.)

- Address - 192.168.1.14  
Gateway - 192.168.1.33
- Address - 192.168.1.45  
Gateway - 192.168.1.33
- Address - 192.168.1.32  
Gateway - 192.168.1.33
- Address - 192.168.1.82  
Gateway - 192.168.1.65
- Address - 192.168.1.63  
Gateway - 192.168.1.65
- Address - 192.168.1.70  
Gateway - 192.168.1.65

7



Refer to the exhibit. How many collision domains are present in the topology?

- 3
- 5
- 6
- 7
- 8

8 What are three characteristics of the TCP protocol? (Choose three.)

- exchanges datagrams unreliably
- is used to send IP error messages
- forces the retransmission of unacknowledged packets
- creates a virtual session between end-user applications
- carries the IP address of the destination host in the TCP header
- is responsible for breaking messages into segments and reassembling them at their destination

9



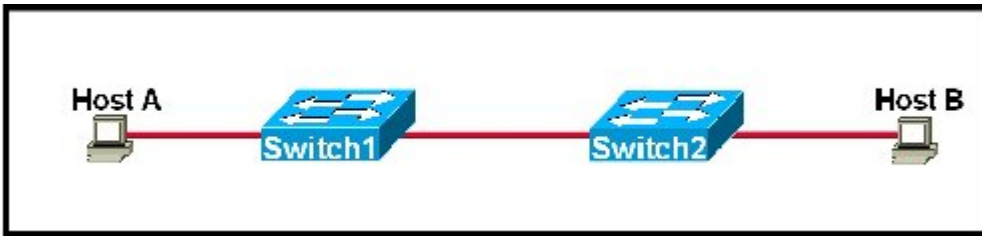
Refer to the exhibit. Which type of Category 5 cable is used to make an Ethernet connection between Host A and Host B?

- coax cable
- rollover cable
- crossover cable
- straight-through cable

10 Which of the following devices extend a collision domain? (Choose two.)

- switch
- hub
- bridge
- router
- repeater

11



Refer to the exhibit. Which type of UTP cable should be used to connect Switch1 to Switch2?

- rollover
- console
- crossover
- straight-through

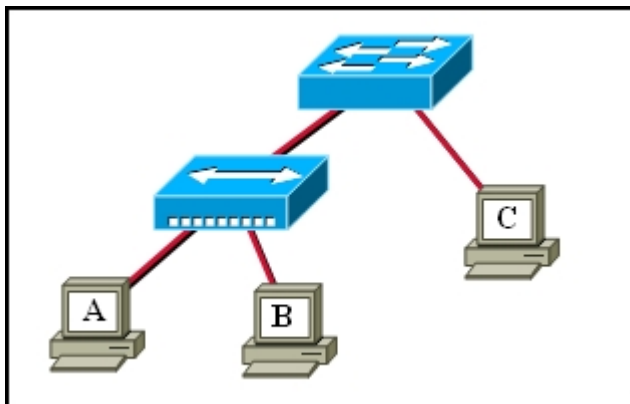
12 Which devices segment collision domains? (Choose two.)

- transceiver
- router
- switch
- hub
- media

13 A NIC of a computer has been assigned an IP address of 172.31.192.166 with a mask of 255.255.255.248. To which subnet does the IP address belong?

- 172.31.0.0
- 172.31.160.0
- 172.31.192.0
- 172.31.248.0
- 172.31.192.160
- 172.31.192.248

14



Refer to the exhibit. A network administrator attempts to increase the available bandwidth for workstation A by setting the

NIC to full-duplex mode. After the configuration is changed, there are increased collisions and errors occurring. Why is this occurring in the network?

- The NIC is no longer detecting collisions.
- The switch will not support full-duplex mode.
- The hub will be continually producing a jam signal.
- The cabling will not support bidirectional transmissions.

15

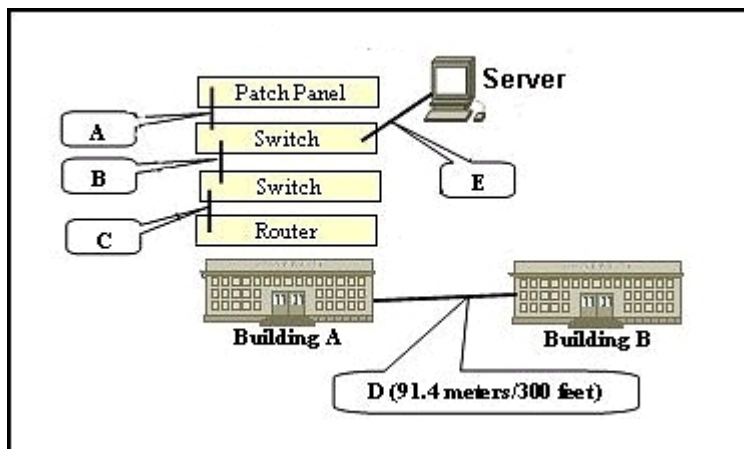
```

C:\Documents and Settings\Cheryl>ip config /all
<<output omitted>>
Ethernet adapter Local Area Connection:
    Connection-specific DNS Suffix . : launchmodem.com
    Description . . . . . : Broadcom NetXtreme 57xx Gigabit Controller
    Physical Address . . . . . : 00-11-11-7a-41-10
    Dhcp Enabled . . . . . : Yes
    Autoconfiguration Enabled . . . . . : Yes
    IP Address . . . . . : 192.168.1.94
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.1.254
<<output omitted>>
    
```

Refer to the exhibit. What is the purpose of the highlighted address?

- It allows the NIC to communicate with other devices on the same network.
- It identifies which part of the IP address is to be considered the network portion.
- It provides an address to which all packets that do not have a specific route are sent.
- It uniquely identifies the NIC to the free token that is passed on the Ethernet network.

16



Refer to the exhibit. Which type of cabling should be used at each of the connection points shown?

- A-crossover
- B- straight-through
- C-straight-through

D-fiber  
E-straight-through

- A-crossover  
B-crossover  
C-straight-through  
D-fiber  
E-crossover
- A-straight-through  
B-crossover  
C-straight-through  
D-fiber  
E-straight-through
- A-fiber  
B-crossover  
C-straight-through  
D-crossover  
E-straight-through
- A-straight-through  
B-crossover  
C-crossover  
D-fiber  
E-straight-through
- A-crossover  
B-crossover  
C-straight-through  
D-fiber  
E-straight-through

- 
- 17 When the receiving workstation detects an error in the data it has received, it does not acknowledge receipt of the data. The source workstation retransmits the unacknowledged data. Which layer of the OSI model supports this process of retransmission?
- network
  - application
  - session
  - transport

18

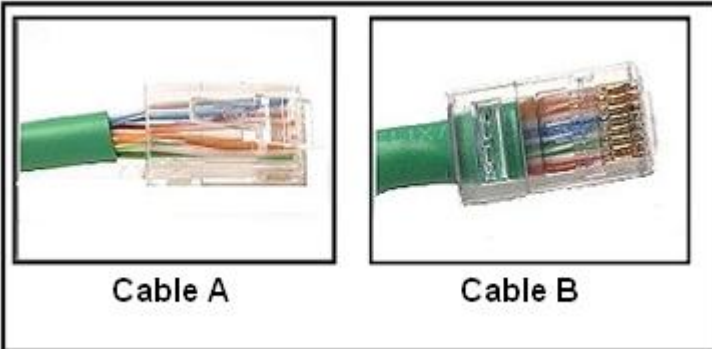
Destination Address	Source Address	Destination Address	Source Address
aaaa.bbbb.cccc	1234.5678.1abc	192.168.10.11	192.168.10.5

Refer to the received frame in the exhibit. In what two ways is the information from the received frame used by a switch?  
(Choose two.)

- 192.168.10.5 is used to create an ARP request.
- 192.168.10.5 is used to build the forwarding table.
- 1234.5678.1abc is stripped from the frame header.

- 192.168.10.11 is left intact as the frame is forwarded.
- The switch compares 192.168.10.11 to the addresses in the routing table to make the forwarding decision.
- To make the forwarding decision, the switch looks in its switch table for address aaaa.bbbb.cccc.

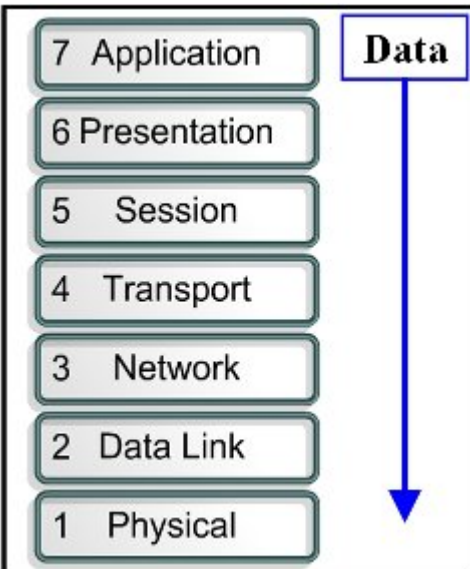
19



Refer to the exhibit. A newly hired technician has a task of terminating CAT 5 UTP cables. The network administrator visually examined the cables the technician terminated. Some of the cables have connectors as shown in the exhibit. What should the network administrator explain to the technician about the cables?

- Both cables are acceptable.
- The cable in Graphic A will produce more crosstalk.
- The cable in Graphic A should be used in the more critical network segments.
- The cable in Graphic A is preferred because it will be easier to crimp the connector.

20

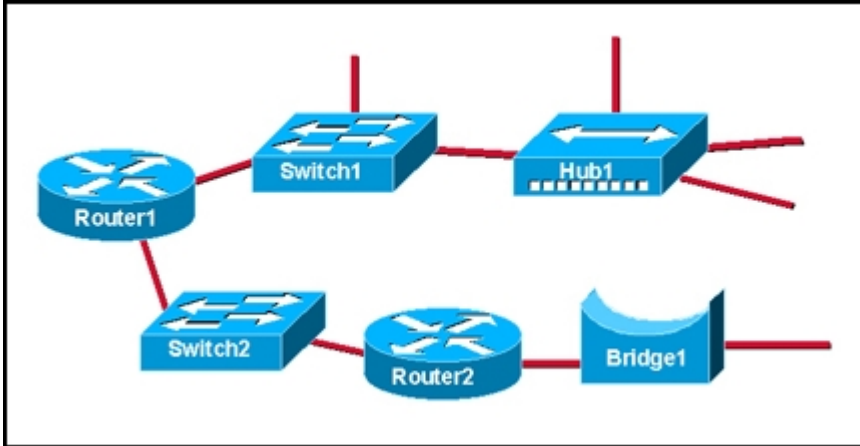


Refer to the exhibit. What is the order of the TCP/IP Protocol Data Units as data is moved as indicated through the OSI model?

- data, segments, frames, packets, bits
- data, packets, segments, frames, bits

- data, segments, packets, frames, bits
- data, packets, frames, segments, bits

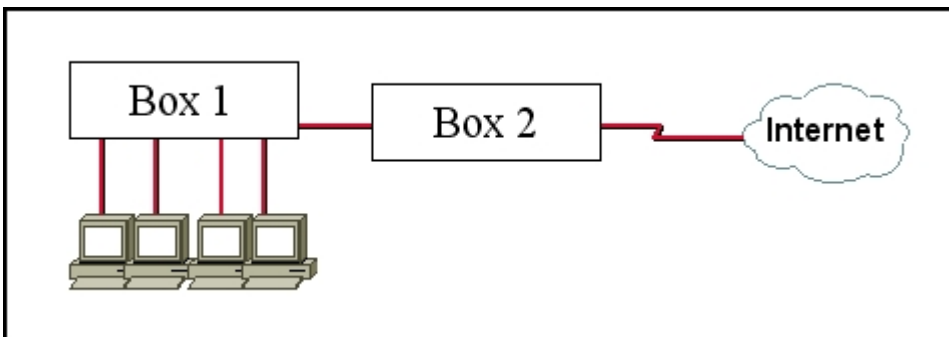
21



How many broadcast domains are shown in the diagram?

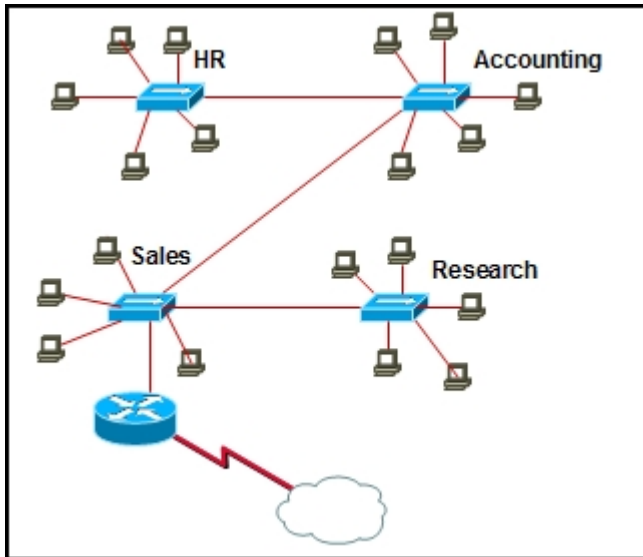
- three
- four
- five
- six
- seven
- eight

22



Refer to the exhibit. An instructor in the network class has given the students the network diagram and asks the students to select the appropriate network devices. The goals are to provide a collision-free LAN environment and to provide Internet connectivity. What is the correct design?

- Replace Box 1 with a hub and Box 2 with a router.
- Replace Box 1 with a router and Box 2 with a bridge.
- Replace Box 1 with a Layer 2 switch and Box 2 with a router.
- Replace Box 1 with a router and Box 2 with a Layer 2 switch.
- Replace Box 1 with a bridge and Box 2 with a Layer 2 switch.

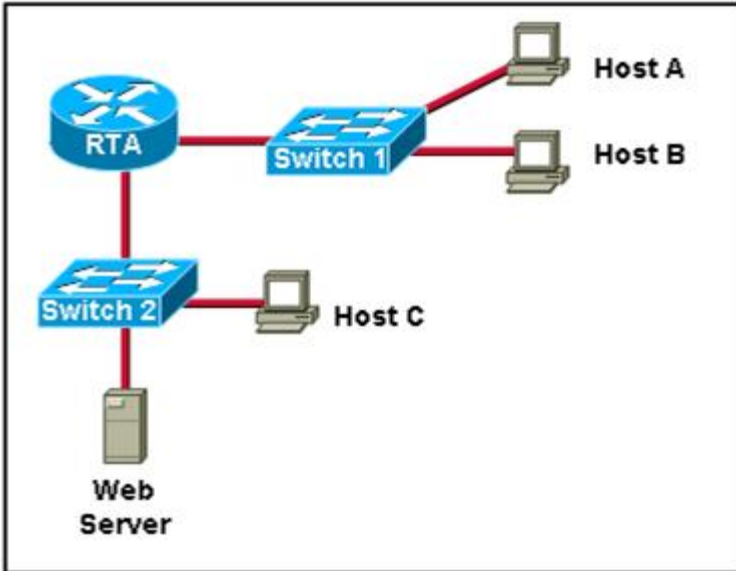


Refer to the exhibit. The GrossoFast Company, which started with two employees, continues to add additional staff to the company and its small network. The company now has sales, human resources, research, and accounting departments in separate areas of the building as shown in the exhibit. In the last two months, since the addition of several employees, the owner has noticed a considerable slowdown in network performance. The owner is getting constant complaints from the sales department that the department needs faster access to critical updates on the products. The company continues to be on a limited budget but the owner recognizes the importance of access to the network resources. What might be done with a limited budget to improve network performance?

- Immediately replace the hub in the sales department with a switch and then continue to replace all hubs with switches as the budget allows.
- Install an additional router between the sales and accounting departments and add additional routers as the budget allows.
- Install an inexpensive 100BASE-T hub in the sales department and continue to install 100BASE-T hubs in the remaining departments.
- Install faster NICs in the sales department computers.

24 Which type of address is 223.168.17.167/29?

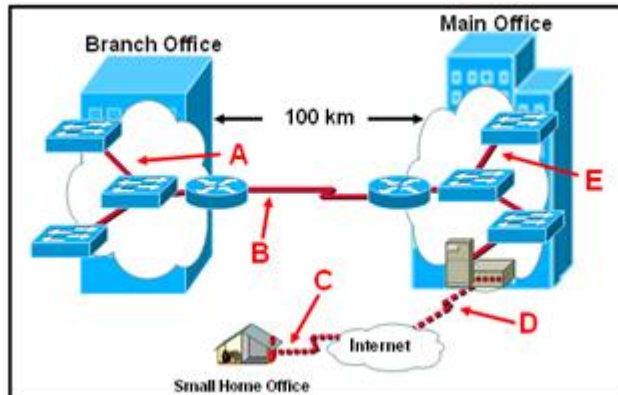
- host address
- multicast address
- broadcast address
- subnet address



Refer to the exhibit. What must be configured on Host B to allow it to communicate with the Host C? (Choose three.)

- the MAC address of RTA router interface connected to Switch 1
- a unique host IP address
- the IP address of Switch 1
- the default gateway address
- the MAC address of Host C
- the subnet mask for the LAN

26

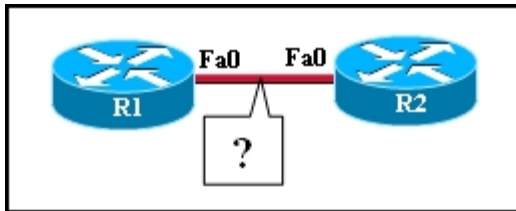


Refer to the exhibit. The connections in the exhibit are labeled A through E. Which of these indicate WAN links? (Choose three.)

- link A
- link B
- link C
- link D
- link E

- 27 Which statement describes a star topology?
- Each host in the network is connected to a backbone cable that is terminated at both ends.
  - Each host is connected to a hub or switch, either of which acts as a central point for all network connections.
  - Each host is directly connected to two other hosts to form a long chain of hosts.
  - Each host has a connection to all other hosts in the network.

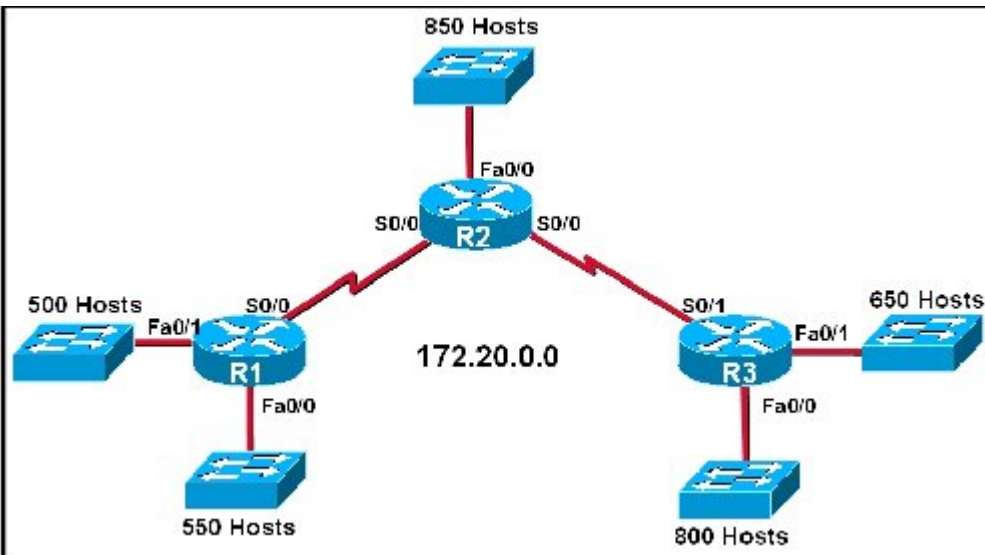
28



Refer to the exhibit. What type of cable connects the two routers together without any intermediary device?

- console
- rollover
- crossover
- straight-through

29



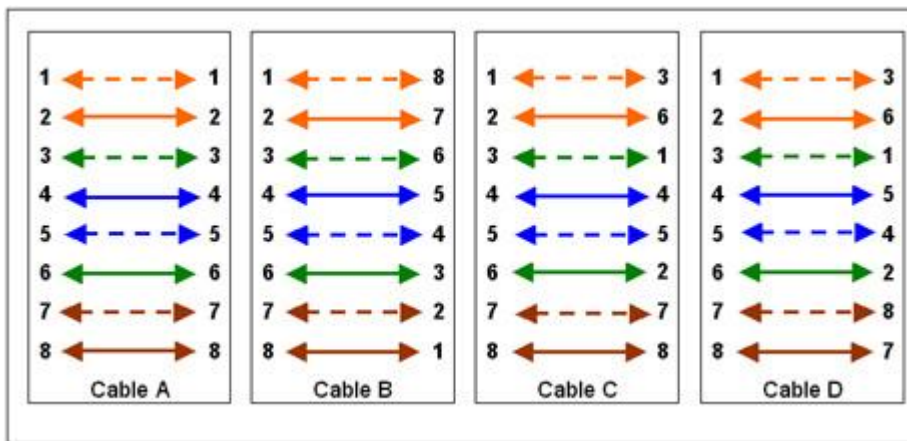
Refer to the exhibit. The internetwork in the exhibit has been assigned the IP address 172.20.0.0. What would be the appropriate subnet mask to maximize the number of networks available for future growth?

- 255.255.224.0
- 255.255.240.0
- 255.255.248.0
- 255.255.252.0
- 255.255.254.0
- 255.255.255.0

- 31 Which combination of network id and subnet mask correctly identifies all IP addresses from 172.16.128.0 through 172.16.159.255?
- 172.16.128.0 255.255.255.224
  - 172.16.128.0 255.255.0.0
  - 172.16.128.0 255.255.192.0
  - 172.16.128.0 255.255.224.0
  - 172.16.128.0 255.255.255.192

- 32 What is the correct number of usable subnetworks and hosts for the IP network address 192.168.99.0 subnetted with a /29 mask?
- 6 networks / 32 hosts
  - 14 networks / 14 hosts
  - 30 networks / 6 hosts
  - 62 networks / 2 hosts

33



Which cable diagram displays the end to end pinout for a console cable used with Cisco devices?

- Cable A
  - Cable B
  - Cable C
  - Cable D
- 34 A company has the following addressing scheme requirements:

- currently has 25 subnets
- uses a Class B IP address
- has a maximum of 300 computers on any network segment
- needs to leave the fewest unused addresses in each subnet

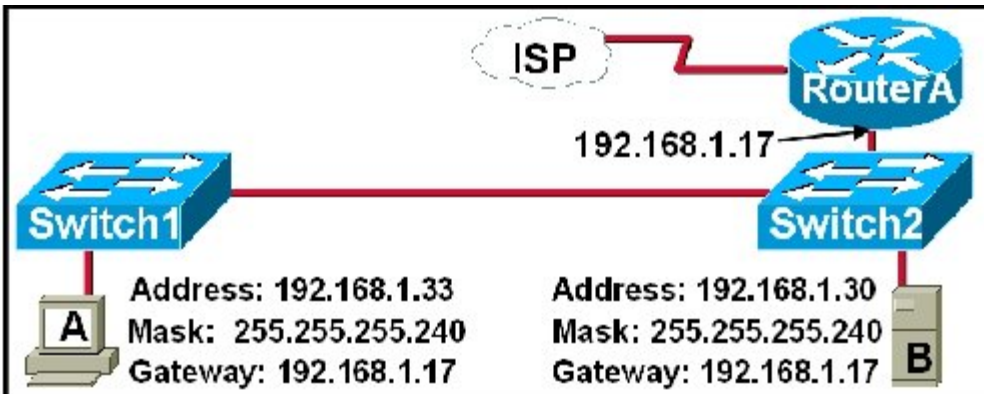
What subnet mask is appropriate to use in this company?

- 255.255.240.0
- 255.255.248.0
- 255.255.254.0
- 255.255.255.0
- 255.255.255.128
- 255.255.255.248

35 Which layer of the OSI model defines the process of adding the source and destination IP address to a data packet?

- transport
- network
- data link
- physical

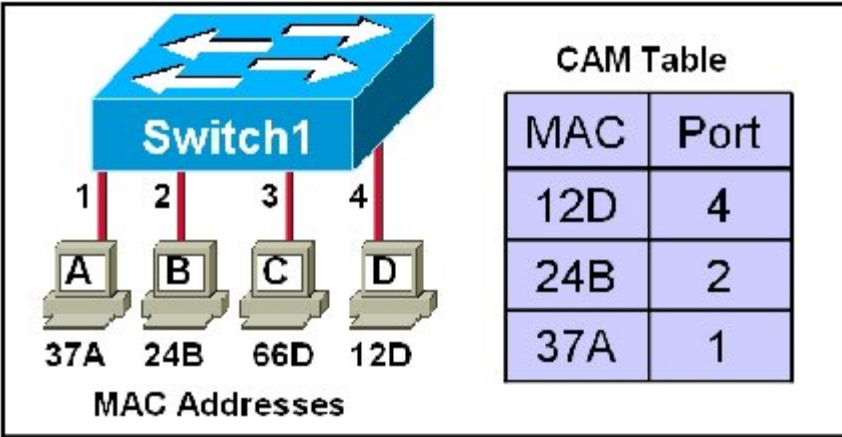
36



Refer to the exhibit. Host A has been added to the network. However, host A cannot communicate with the server B or the Internet. All cables have been tested and are functioning to standards. At which layer of the OSI model is this problem occurring?

- Layer 1
- Layer 2
- Layer 3
- Layer 4

37



A simplified CAM table for Switch1 is shown in the exhibit. If host A sends a frame with a destination MAC address of 66C, how does the switch process this frame?

- The switch drops the frame.
- The switch sends the frame out port 3.
- The switch sends the frame out ports 1, 2, and 4.
- The switch sends the frame out ports 2, 3, and 4.
- The switch sends the frame out ports 1, 2, 3, and 4.

38 A workstation is browsing a web server. What will be the partial contents of the segment sent from the workstation to the web server?



source port	destination port	sequence number	acknowledgment number
1026	80	1	0



source port	destination port	sequence number	acknowledgment number
80	1026	1	0

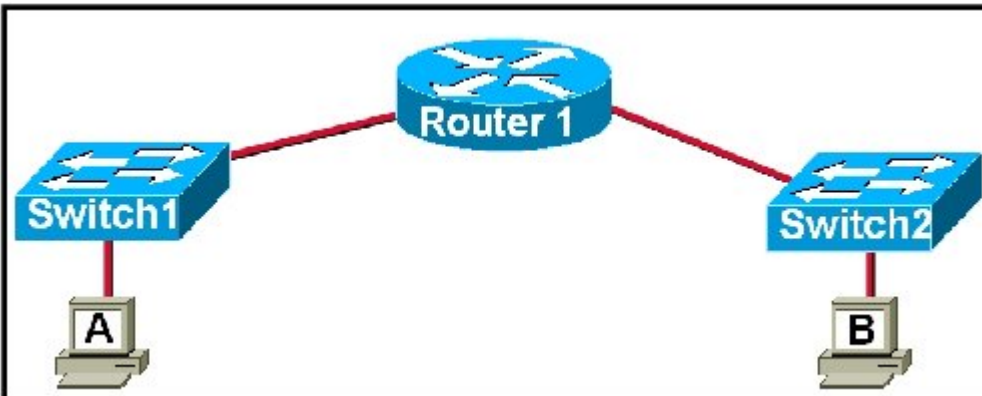


source port	destination port	sequence number	acknowledgment number
1026	1026	80	0



source port	destination port	sequence number	acknowledgment number
1026	1026	80	80

39



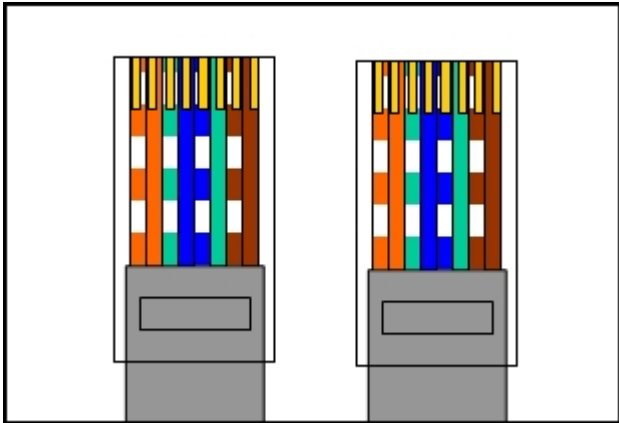
Workstation A sends data to workstation B. What will have to be altered as the data passes through the router? (Choose two.)

- Layer 1 bit pattern
- Layer 2 frames
- Layer 3 packets
- Layer 4 segments
- Layer 5 -7 data

40 Which binary number is a representation of the decimal number 248?

- 11101000
- 11110100
- 11111000
- 11111010

41



A technician needs to connect a FastEthernet port from a router to a FastEthernet port on a switch. The graphic shows the RJ-45 cable ends for a patch cable. What result can be expected if this cable is used for the link?

- The cable will be able to pass traffic between the devices.
  - The cable has reversed-pairs, which will degrade the signal quality.
  - The cable has split-pairs, which will increase crosstalk and create an unreliable link.
  - The cable has all the wires reversed, which will prevent the link lights from indicating that there is link.
- 

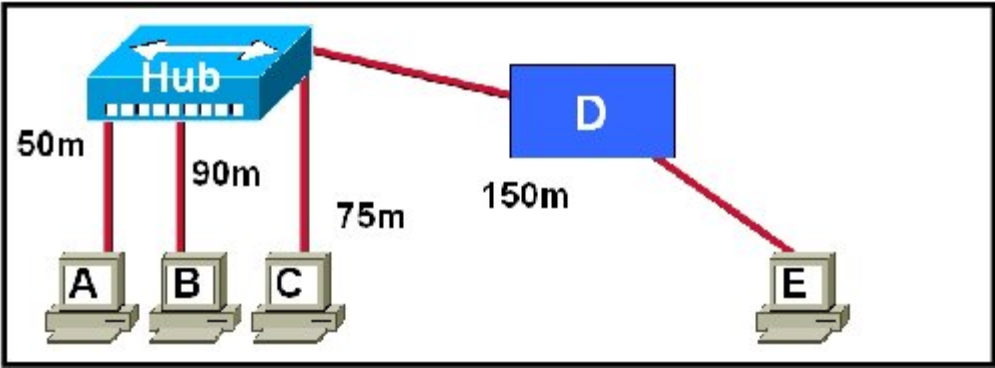
42 Which subnet masks would be valid for a subnetted Class B address? (Choose two.)

- 255.0.0.0
  - 255.254.0.0
  - 255.224.0.0
  - 255.255.0.0
  - 255.255.252.0
  - 255.255.255.192
- 

43 What should a network administrator consider when migrating to Gigabit Ethernet architecture from Fast Ethernet? (Choose three.)

- Existing NICs might need to be upgraded.
  - Existing switches might need to be upgraded.
  - Existing NICs must support half-duplex mode.
  - Existing UTP wiring must be replaced with fiber.
  - Existing UTP must be tested for CAT 5e compatibility.
  - Existing network topology must support shared media.
- 

44



Refer to the exhibit. A company needs to attach workstation E at a point 150 meters from an existing hub. What device should be placed at location D to allow the new host to connect to the network with the least amount of latency?

- router
- switch
- bridge
- repeater

45

Host	MAC address
PC1	00-06-5B-88-DF-C3
PC2	00-B0-D0-7F-F7-46
Switch1	00-0F-24-85-75-C0
Switch2	00-0B-E5-64-BD-44
Fa0/0	00-08-A3-B6-CE-02
Fa0/1	00-08-A3-B6-CE-03

Refer to the exhibit. Workstation 1 pings the Fa0/1 interface of Router 1. Which MAC address will workstation 1 obtain during the ARP request for this communication?

- 00-06-5B-88-DF-C3
- 00-B0-D0-7F-F7-46
- 00-0F-24-85-75-C0
- 00-0B-E5-64-BD-44
- 00-08-A3-B6-CE-02
- 00-08-A3-B6-CE-03

46 Which protocols are TCP/IP application layer protocols? (Choose two.)

- UDP
- FTP

- IP
  - SMTP
  - TCP
- 

**47** A network user is using the FTP protocol to transfer data from the local host to an FTP server. The local host is also using the SNMP protocol to report the system status to the network management system. Which statement describes the communication from the host?

- FTP and SNMP will use the same port number.
  - FTP uses TCP to establish a session before any data is transferred.
  - The UDP session will reorder the SNMP data as it is received by the network management system.
  - The TCP protocol for the FTP transfer will use a random destination port number to the FTP server.
- 

**48** When the destination network is not listed in the routing table of a Cisco router, what are two possible actions that the router might take? (Choose two.)

- The router sends an ARP request to determine the required next hop address.
  - The router discards the packet.
  - The router forwards the packet toward the next hop indicated in the ARP table.
  - The router forwards the packet to the interface indicated by the source address.
  - The router forwards the packet out the interface indicated by the default route entry.
- 

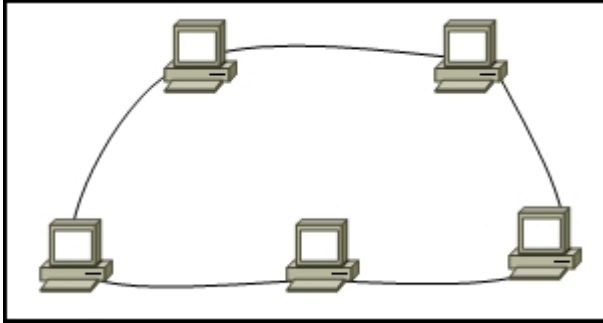
**49** Which of the following increases the potential for a collision to occur?

- the use of an active hub instead of an intelligent hub
  - the use of an intelligent hub instead of an active hub
  - a reduction in the number of devices attached to the hub
  - an increase in the number of devices attached to the hub
- 

**50** What can be verified by successfully pinging the reserved loopback address on a host?

- Connectivity exists between two hosts on the LAN.
  - The TCP/IP stack of the local host is installed correctly.
  - A connection exists between a host and the default gateway.
  - The route a packet takes from the local host to a remote host is valid.
- 

**51**



Refer to the exhibit. What is an advantage of using this type of topology?

- This type of network has redundancy.
  - No collisions occur on this type of network.
  - Network communication continues in the event of a break.
  - A central device on the network controls communication on this type of network.
- 

**52** A collision has occurred on an Ethernet network. Which three statements explain the CSMA/CD process? (Choose three.)

- After the jam signal, all transmission stops for a random period.
  - When the collision is detected, the hosts stop transmission immediately.
  - When the collision is detected, the hosts stop transmission after eight microseconds.
  - When the backoff period expires, the hosts involved in the collision have priority to transmit.
  - When the backoff period expires, each host checks to see whether the networking media is idle and then attempts to transmit.
  - When the collision is detected, the hosts continue to transmit using a jam pattern for a short time to ensure that all hosts detect the collision.
-