Below you will find the assessment items as presented on the exam as well as the scoring rules associated with the item.

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1   When connectionless protocols are implemented at the lower layers of the OSI model, what is usually used to acknowledge that
       was received and to request the retransmission of missing data?

   ○   IP

   ○   UDP

   ○   Ethernet

   ○   a connectionless acknowledgement

   ◉   an upper-layer, connection-oriented protocol or service

2
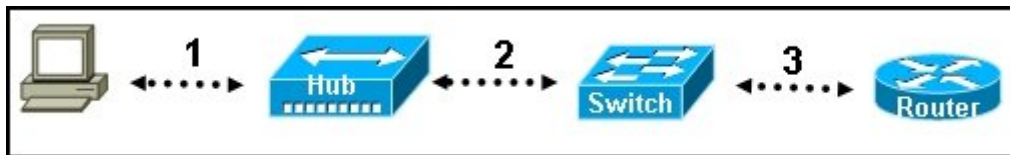
   Refer to the exhibit. Each media link is labeled. What type of cable should be used to connect the different devices?

   ○   Connection 1 - rollover cable
       Connection 2 - straight-through cable
       Connection 3 - crossover cable

   ○   Connection 1 - crossover cable
       Connection 2 - rollover cable
       Connection 3 - crossover cable

   ○   Connection 1 - straight-through cable
       Connection 2 - crossover cable
       Connection 3 - crossover cable

   ◉   Connection 1 - straight-through cable
       Connection 2 - crossover cable
       Connection 3 - straight-through cable

   ○   Connection 1 - crossover cable
       Connection 2 - straight-through cable
       Connection 3 - crossover cable

3   Which OSI layer does IP rely on to determine whether packets have been lost and to request retransmission?

   ○   application

   ○   presentation

   ○   session

   ◉   transport

4   What is true regarding network layer addressing? (Choose three.)

   ☑   uses a flat structure

   ☐   prevent broadcasts

☐ heirarchical

☑ uniquely identifies each host
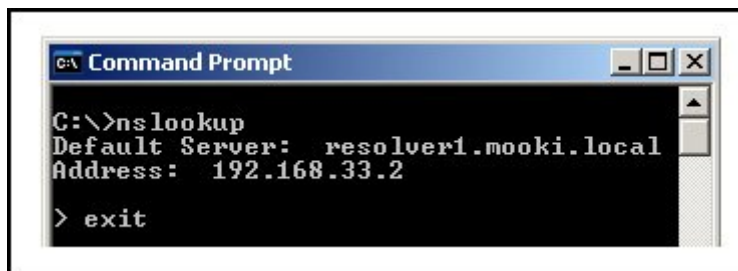
☐ 48 bits in length

☑ contains a network portion

5 A PC can not connect to any remote websites, ping its default gateway, or ping a printer that is functioning properly on the local segment. Which action will verify that the TCP/IP stack is functioning correctly on this PC?

○ Use the **ipconfig /all** command at the host's command prompt.

◉ Use the **ping 127.0.0.1** command at the command prompt.

○ Use the **traceroute** command at the command prompt to identify any failures on the path to the gateway.

○ Use FTP to check for connectivity to remote sites.

○ Download a troubleshooting tool from the PC manufacturer's website.

6 Which type of media is immune to EMI and RFI? (Choose two.)

☐ 10 Base-T

☐ 10 Base-2

☐ 10 Base-5

☑ 100 Base-FX

☐ 100 Base TX

☑ 1000 Base LX

7


```
Command Prompt                          _□×
C:\>nslookup
Default Server:  resolver1.mooki.local
Address:  192.168.33.2

> exit
```
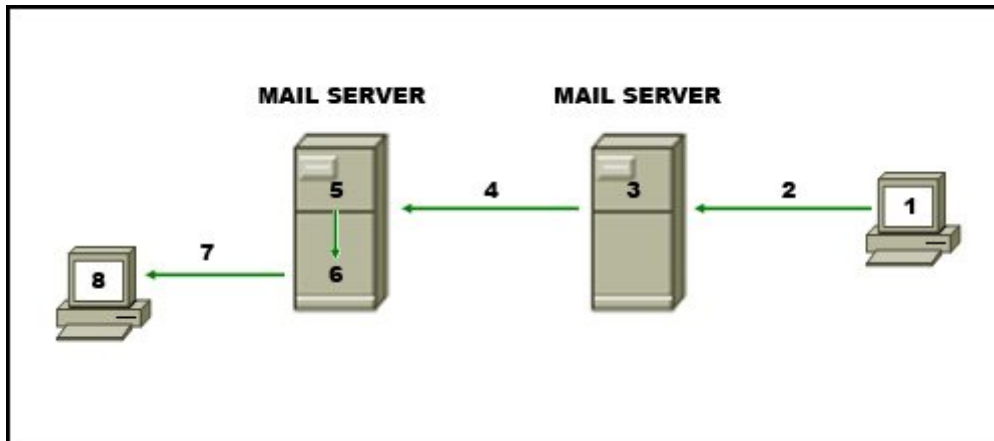
Refer to the exhibit. The command that is shown was issued on a PC. What does the IP address 192.168.33.2 represent?

○ IP address of the host

○ default gateway of the host

○ IP address of the homepage for the host

◉ primary domain name server for the host

○ IP address of the website resolver1.mooki.local

8

Refer to the exhibit. The diagram represents the process of sending email between clients. Select the list below that correctly id the component or protocol used at each numbered stage of the diagram.
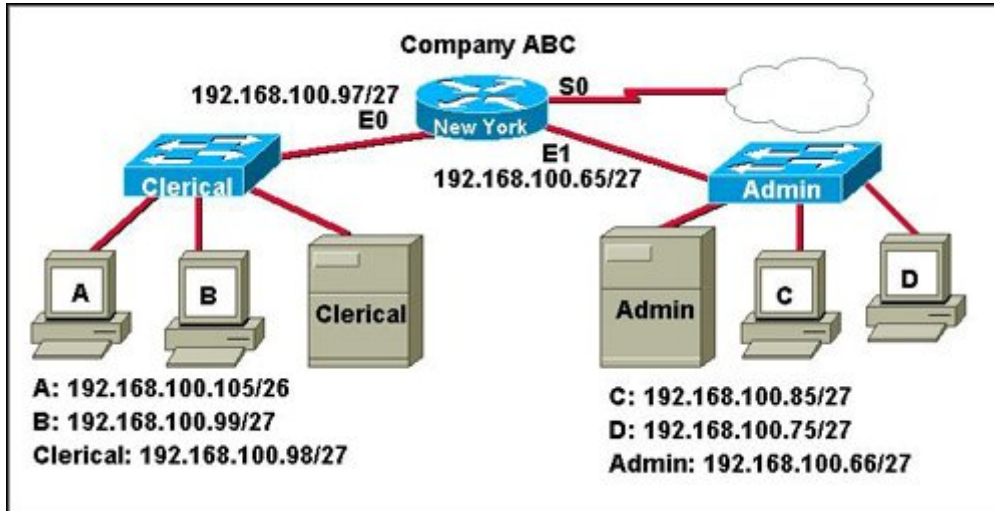
○ 1.MUA 2.MDA 3.MTA 4.SMTP 5.MTA 6.POP 7.MDA 8.MUA

○ 1.MUA 2.POP 3.MDA 4.SMTP 5.MTA 6.MDA 7.SMTP 8.MUA

○ 1.MUA 2.POP 3.SMTP 4.MDA 5.MTA 6.SMTP 7.POP 8.MUA

○ 1.MDA 2.SMTP 3.MTA 4.SMTP 5.MTA 6.MUA 7.POP 8.MDA

◉ 1.MUA 2.SMTP 3.MTA 4.SMTP 5.MTA 6.MDA 7.POP 8.MUA

9   Which three statements characterize the transport layer protocols? (Choose three.)

☑   TCP and UDP port numbers are used by application layer protocols.

☐   TCP uses port numbers to provide reliable transportation of IP packets.

☐   UDP uses windowing and acknowledgments for reliable transfer of data.

☑   TCP uses windowing and sequencing to provide reliable transfer of data.

☑   TCP is a connection-oriented protocol. UDP is a connectionless protocol.

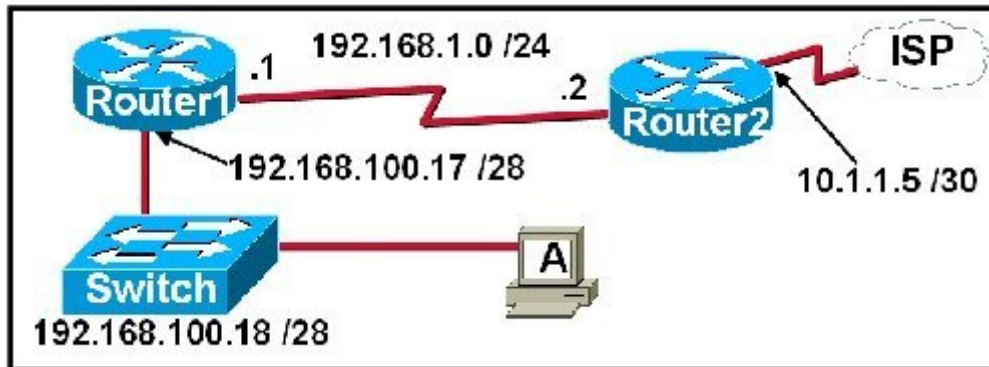**10** Which OSI layers offers reliable, connection-oriented data communication services?

○   application

○   presentation

○   session

◉   transport

○   network

11

Company ABC

192.168.100.97/27
E0
New York
S0
E1
192.168.100.65/27
Admin

Clerical

A B Clerical

Admin C D

A: 192.168.100.105/26
B: 192.168.100.99/27
Clerical: 192.168.100.98/27

C: 192.168.100.85/27
D: 192.168.100.75/27
Admin: 192.168.100.66/27

Examine the graphic with current configurations. Host A in the Clerical offices failed and was replaced. Although a ping to 127.0 successful, the replacement computer can not access the company network. What is the likely cause of the problem?

○ IP address incorrectly entered

○ network cables unplugged

⦿ subnet mask incorrectly entered

○ network card failure

12

192.168.1.0 /24
ISP
Router1 .1
.2
Router2
192.168.100.17 /28
10.1.1.5 /30
Switch
192.168.100.18 /28
A

Refer to the exhibit. A network technician is trying to determine the correct IP address configuration for Host A. What is a valid configuration for Host A?

○ IP address: 192.168.100.19; Subnet Mask: 255.255.255.248; Default Gateway: 192.16.1.2

⦿ IP address: 192.168.100.20; Subnet Mask: 255.255.255.240; Default Gateway: 192.168.100.17

○ IP address: 192.168.100.21; Subnet Mask: 255.255.255.248; Default Gateway: 192.168.100.18

○ IP address: 192.168.100.22; Subnet Mask: 255.255.255.240; Default Gateway: 10.1.1.5

○ IP address: 192.168.100.30; Subnet Mask: 255.255.255.240; Default Gateway: 192.168.1.1

○ IP address: 192.168.100.31; Subnet Mask: 255.255.255.240; Default Gateway: 192.168.100.18

13 As network administrator, what is the subnet mask that allows 510 hosts given the IP address 172.30.0.0?

○ 255.255.0.0

○ 255.255.248.0

○ 255.255.252.0

⦿ 255.255.254.0

○ 255.255.255.0

○ 255.255.255.128

---

14 What are three characteristics of CSMA/CD? (Choose three.)

☐ Devices can be configured with a higher transmission priority.

☐ A jam signal indicates that the collision has cleared and the media is not busy.

☑ A device listens and waits until the media is not busy before transmitting.

☐ The device with the electronic token is the only one that can transmit after a collision.

☑ All of the devices on a segment see data that passes on the network medium.

☑ After detecting a collision, hosts can attempt to resume transmission after a random time delay has expired.

15 Which of the following are the address ranges of the private IP addresses? (Choose three.)

☑ 10.0.0.0 to 10.255.255.255

☐ 200.100.50.0 to 200.100.25.255

☐ 150.150.0.0 to 150.150.255.255

☑ 172.16.0.0 to 172.31.255.255

☑ 192.168.0.0 to 192.168.255.255

☐ 127.16.0.0 to 127.31.255.255

---

16 Which combination of network id and subnet mask correctly identifies all IP addresses from 172.16.128.0 through 172.16.159.2

○ 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

---

17 Which password is automatically encrypted when it is created?

○ vty

○ aux

○ console

◉ enable secret

○ enable password

18 Due to a security violation, the router passwords must be changed. What information can be learned from the following configur
entries? (Choose two.)

Router(config)# **line vty 0 3**
Router(config-line)# **password c13c0**
Router(config-line)# **login**

☐ The entries specify three Telnet lines for remote access.

☑ The entries specify four Telnet lines for remote access.

☐ The entries set the console and Telnet password to "c13c0".

☐ Telnet access will be denied because the Telnet configuration is incomplete.

☑ Access will be permitted for Telnet using "c13c0" as the password.

19 When must a router serial interface be configured with the **clock rate** command?

○ when the interface is functioning as a DTE device

○ when the interface timers have been cleared

○ when the connected DTE device is shut down

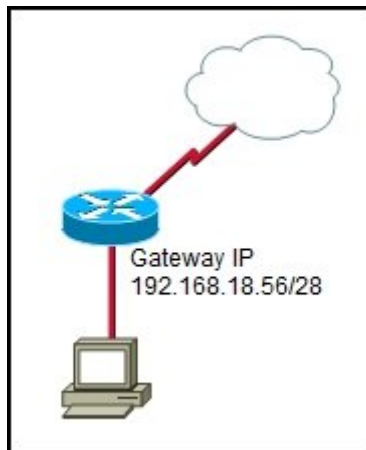◉ when the interface is functioning as a DCE device

20 Which two functions of the OSI model occur at layer two? (Choose two.)

☑ physical addressing

☐ encoding

☐ routing

☐ cabling

☑ media access control

21 A routing issue has occurred in you internetwork. Which of the following type of devices should be examined to isolate this error

○ access point

○ host

○ hub

◉ router

○ switch

22
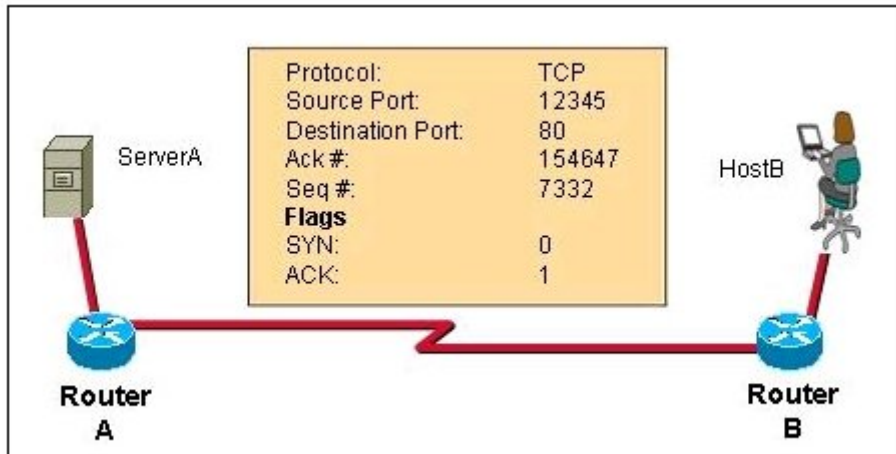

Refer to the exhibit. With the router running NAT, what IP addresses can be applied to the computer to allow access to the Inter (Choose three.)

☐ 192.168.18.38

☐ 192.168.18.48

☑ 192.168.18.49

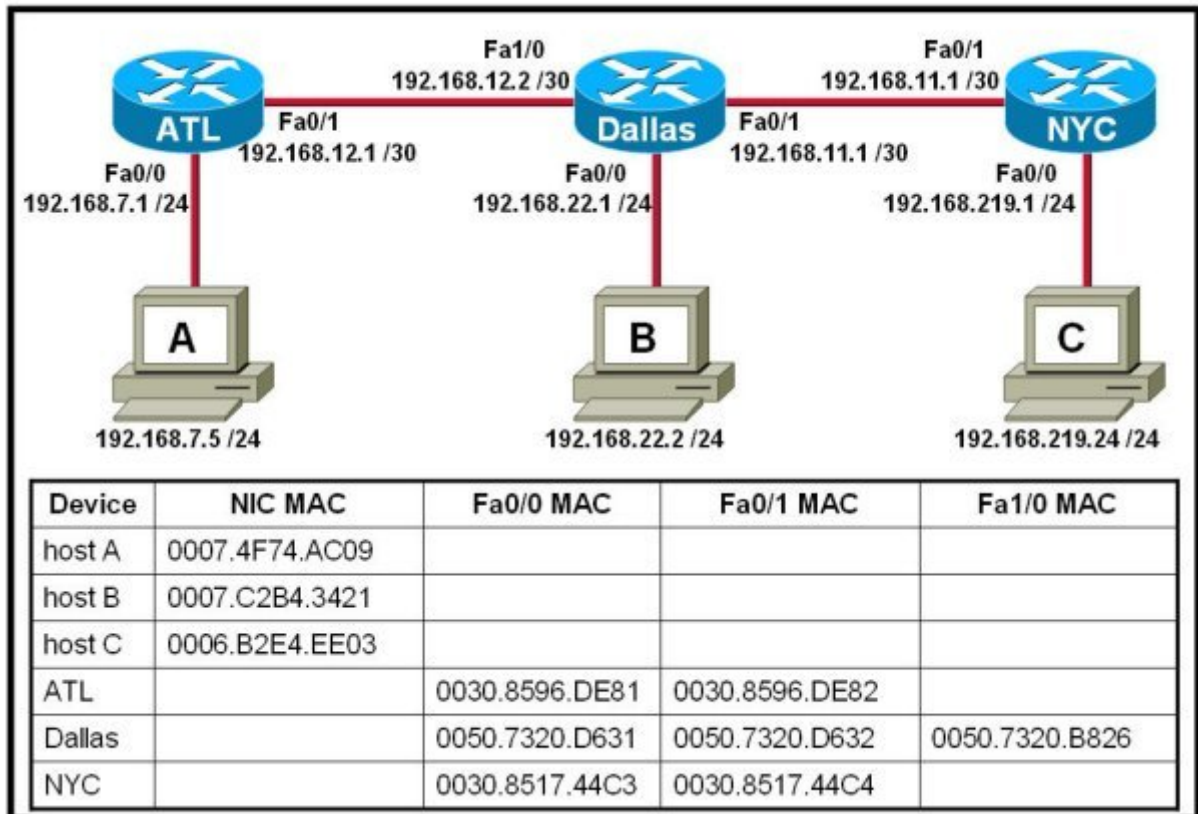☑ 192.168.18.52

☑ 192.168.18.59

☐ 192.168.18.63

23

Refer to the exhibit. What two facts can be determined from the information that is given? (Choose two.)

☐ This exchange is part of the three-way handshake.

☐ The source port indicates that a Telnet session has been initiated.

☐ The data is flowing from server to client.

☑ The destination port indicates that an HTTP session has been initiated.

☑ The data listed is associated with the transport layer.

☐ The source port does not support communication with the destination port that is listed.

24

| Device	NIC MAC	Fa0/0 MAC	Fa0/1 MAC	Fa1/0 MAC
host A	0007.4F74.AC09			
host B	0007.C2B4.3421			
host C	0006.B2E4.EE03			
ATL		0030.8596.DE81	0030.8596.DE82	
Dallas		0050.7320.D631	0050.7320.D632	0050.7320.B826
NYC		0030.8517.44C3	0030.8517.44C4	

Refer to the exhibit. Host A attempts to establish a TCP/IP session with host C. During this attempt, a frame was captured with the source MAC address 0050.7320.D632 and the destination MAC address 0030.8517.44C4. The packet inside the captured frame IP source address 192.168.7.5, and the destination IP address is 192.168.219.24. At which point in the network was this packet captured?

- ○ leaving host A
- ○ leaving ATL
- ⦿ leaving Dallas
- ○ leaving NYC

25
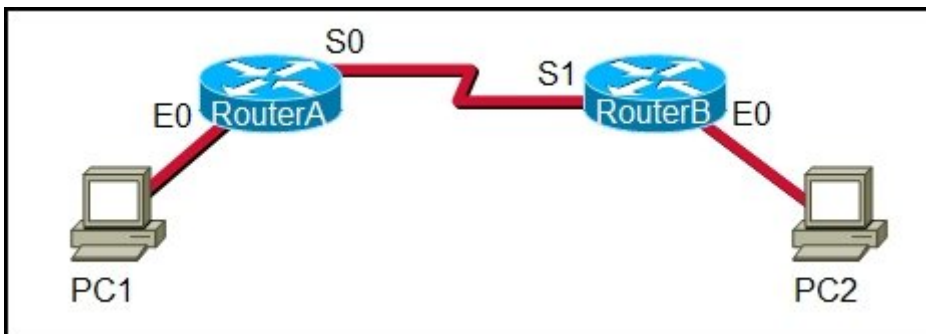
Refer to the exhibit. A network administrator remotely accesses the CLI of RouterB from PC1 using Telnet. Which statement is about this connection?

- ○ The data is automatically encrypted.
- ○ A Telnet server process is running on PC1.
- ⦿ The connection is made through a VTY session on the router.
- ○ A GET request was sent to RouterB to retrieve data during this session.

26
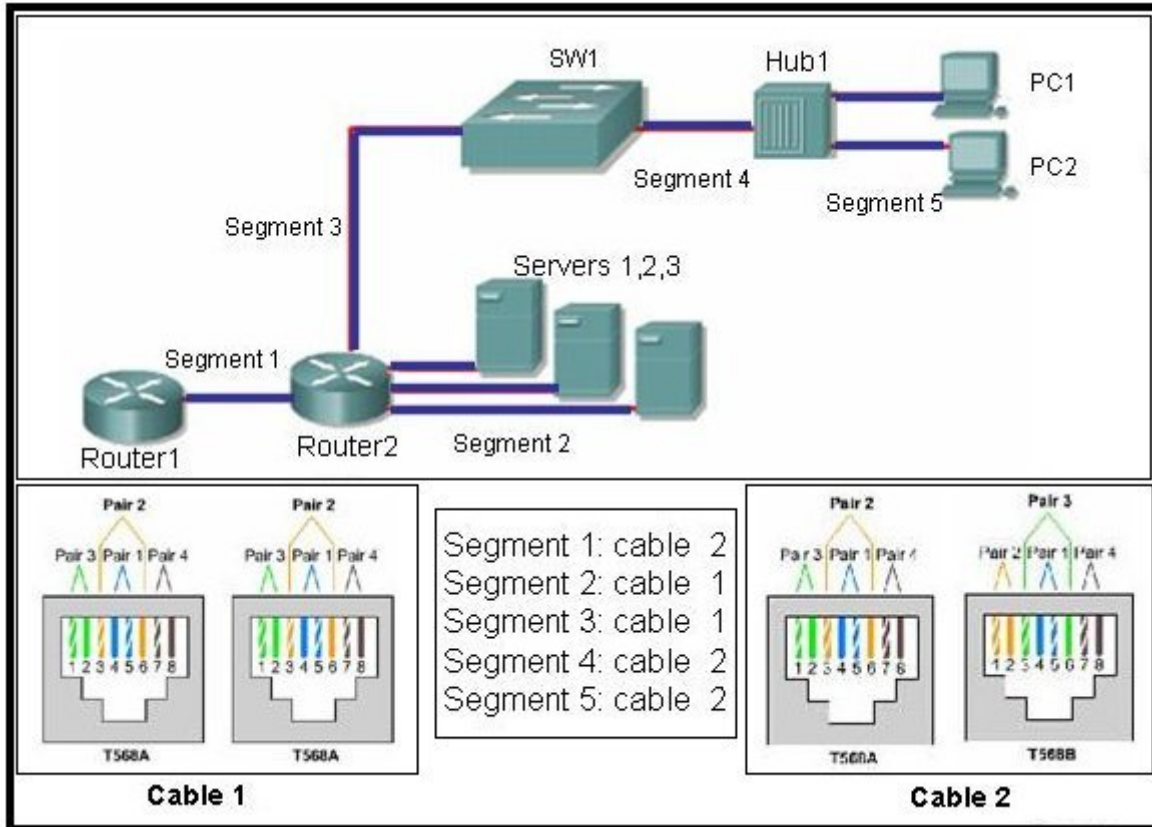
Refer to the exhibit. Cable 1 and cable 2 have the ends wired for specific physical layer requirements. The table lists each segment number and the cable which has been installed by the network technician between the network components on that segment. From the data given, which segments have the correct cable installed? (Choose three.)

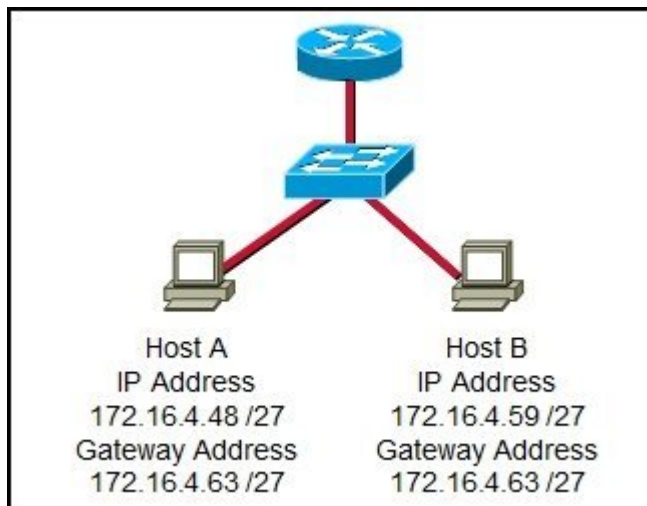☑ segment1

☐ segment2

☑ segment3

☑ segment4

☐ segment5

27
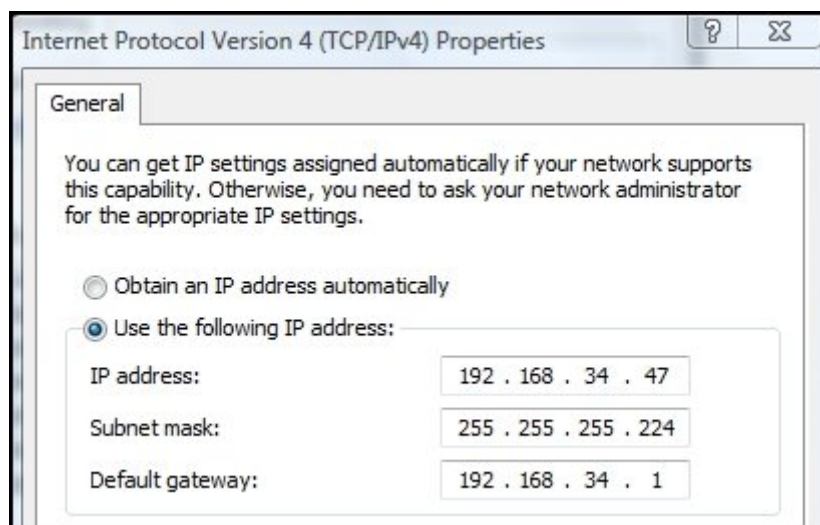
Refer to the exhibit. What three statements are true about the IP configuration that is shown? (Choose three.)

☑ The address that is assigned to the computer represents private addressing.

☑ The computer is unable to communicate outside of the local network.

☐ The network of this computer can have 126 hosts.

☑ The prefix of the computer address is /27.

☐ The IP address that is assigned to the computer is routable on the Internet.

☐ The IP address that is assigned to the computer is a broadcast address.

---

28 Which three IPv4 addresses represent a broadcast for a subnet? (Choose three.)

☑ 172.16.4.63 /26

☐ 172.16.4.129 /26

☑ 172.16.4.191 /26

☐ 172.16.4.51 /27

☑ 172.16.4.95 /27

☐ 172.16.4.221 /27

29

Host A
IP Address
172.16.4.48 /27
Gateway Address
172.16.4.63 /27

Host B
IP Address
172.16.4.59 /27
Gateway Address
172.16.4.63 /27

Refer to the exhibit. On the basis of the IP configuration that is shown, what is the reason that Host A and Host B are unable to communicate outside the local network?

○ Host A was assigned a network address.

○ Host B was assigned a multicast address.

○ Host A and Host B belong to different networks.

◉ The gateway address was assigned a broadcast address.

---

30 The Layer 4 header contains which type of information to aid in the delivery of data?

◉ service port number

○ host logical address

○ device physical address

○ virtual connection identifier

31 During the encapsulation process, which identifiers are added at the transport layer?

- ○ two networks routing the packets
- ◉ two applications communicating the data
- ○ two hosts at either end of the communication
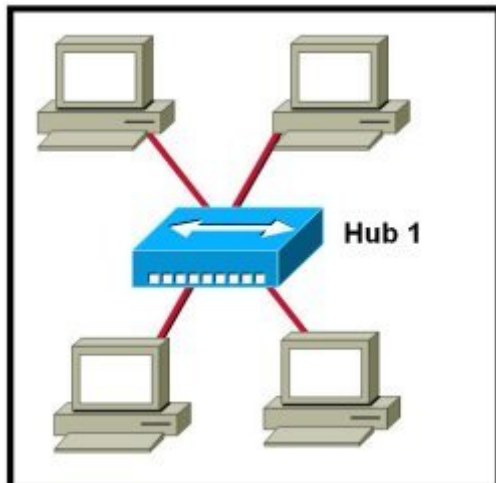- ○ two nodes on the local network exchanging the frame

32
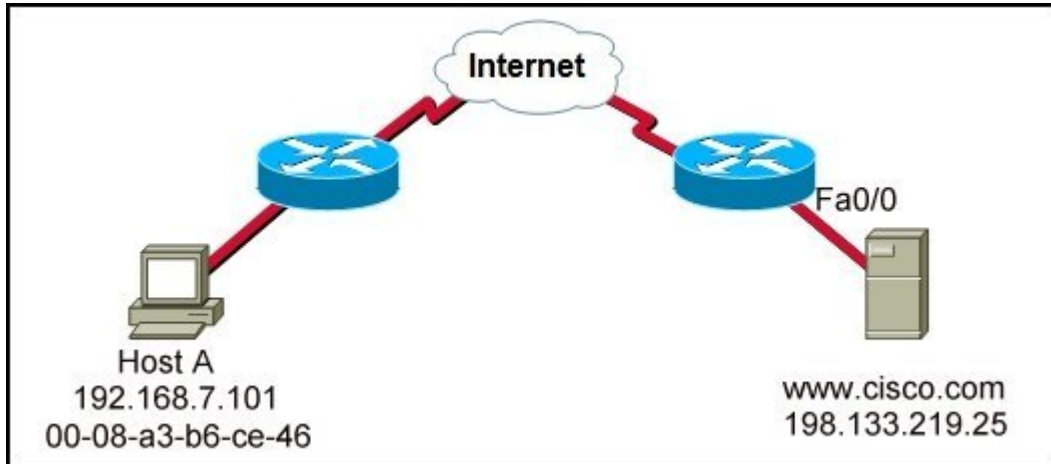
Refer to the exhibit. What is the correct destination socket number for a web page request from Host A to the web server?

- ○ 00-08-a3-b6-ce-46
- ◉ 198.133.219.25:80
- ○ http://www.cisco.com
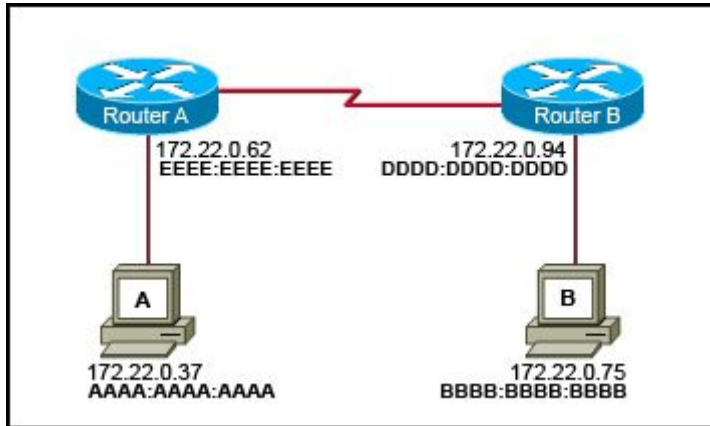- ○ C 198.133.219.0/24 is directly connected, FastEthernet0/0

33

Refer to the exhibit. Which logical topology best describes the exhibited network?

- ◉ star
- ○ ring
- ○ point-to-point
- ○ multiaccess
- ○ mesh

34

Refer to the exhibit. Host A is transmitting data to host B. What addresses will host A use to for the destination IP and MAC add this communication?

○ Destination MAC: BBBB:BBBB:BBBB Destination IP: 172.22.0.62

○ Destination MAC: DDDD:DDDD:DDDD Destination IP: 172.22.0.75

○ Destination MAC: EEEE:EEEE:EEEE Destination IP: 172.22.0.62

○ Destination MAC: BBBB:BBBB:BBBB Destination IP: 172.22.0.75

◉ Destination MAC: EEEE:EEEE:EEEE Destination IP: 172.22.0.75

○ Destination MAC: DDDD:DDDD:DDDD Destination IP: 172.22.0.94

35

Refer to the exhibit. A router, whose table is shown, receives a packet that is destined for 192.168.1.4. How will router treat the

○ The packet will be dropped.

○ The packet will be forwarded via FastEthernet 0/0.

◉ The packet will be forwarded to the destination host.

○ The packet will be forwarded to the 192.168.1.3 next-hop address.

36
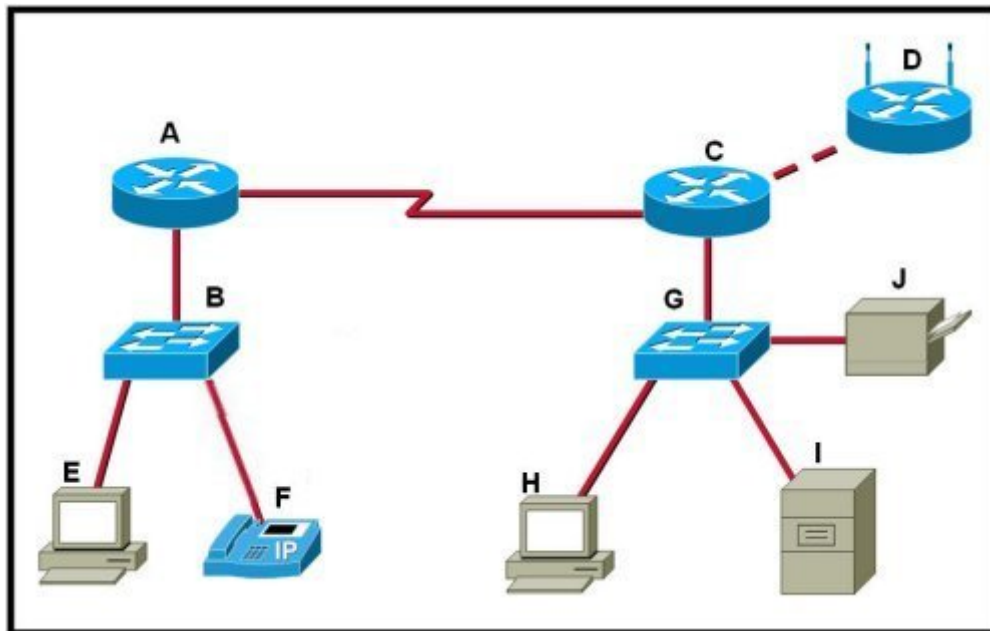
Refer to the exhibit. Which set of devices contains only intermediary devices?

- ⦿ A, B, D, G
- ○ A, B, E, F
- ○ C, D, G, I
- ○ G, H, I, J

37


```
C:\> ipconfig /all

Windows IP Configuration

        Host Name . . . . . . . . . . . . : md-wxp2
        Primary Dns Suffix  . . . . . . . : cisco.com
        Node Type . . . . . . . . . . . . : Hybrid
        IP Routing Enabled. . . . . . . . : No
        WINS Proxy Enabled. . . . . . . . : No
        DNS Suffix Search List. . . . . . : cisco.com

Ethernet adapter Wireless Network Connection:

        Connection-specific DNS Suffix  . : cisco.com
        Description . . . . . . . . . . . . : Intel(R) PRO/Wireless 3945ABG
        Physical Address. . . . . . . . . : 00-18-DE-C7-F3-FB
        Dhcp Enabled. . . . . . . . . . . : No
        IP Address. . . . . . . . . . . . : 192.168.254.9
        Subnet Mask . . . . . . . . . . . : 255.255.255.0
        Default Gateway . . . . . . . . . : 192.168.254.1
        DNS Servers . . . . . . . . . . . : 192.168.64.196
```

Refer to the exhibit. A technician is working on a network problem that requires verification of the router LAN interface. What ad
should be pinged from this host to confirm that the router interface is operational?

- ○ 127.0.0.1

○ 192.168.64.196

◉ 192.168.254.1

○ 192.168.254.9

○ 192.168.254.254

38 Which prompt represents the appropriate mode used for the **copy running-config startup-config** command ?

○ Switch-6J>

◉ Switch-6J#

○ Switch-6J(config)#

○ Switch-6J(config-if)#

○ Switch-6J(config-line)#

39 A technician is asked to secure the privileged EXEC mode of a switch by requiring a password. Which type of password would r this login and be considered the most secure?

○ console

○ enable

◉ enable secret

○ VTY

40 Which range of port numbers are reserved for services that are commonly used by applications that run on servers?

○ 0 to 255

◉ 0 to 1023

○ 1024 to 49151

○ 49152 to 65535

41

Partial Layer 4 Header		
Bit 0	Bit 16	Bit 31
Source Port 13357	Destination Port 23	
Sequence Number 3001		
Header Length, Reserved, Code Bits	Window 1500	

Refer to the exhibit. Which two statements describe the information that is represented in the header? (Choose two.)
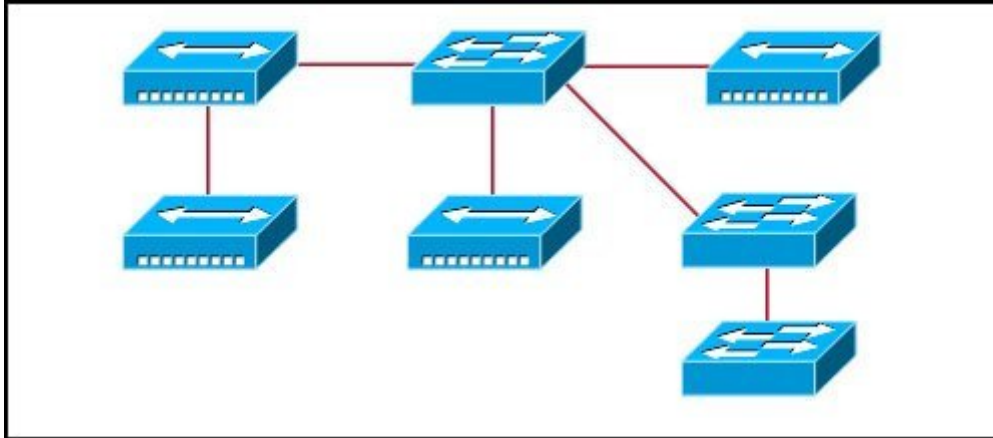
☐ This is a server response.

☐ The UDP protocol is being used.

☑ The destination port indicates a Telnet session.

☑ The return segment will contain a source port of 23.

☐ The next session originated from the client of this session will use the source port number 13358.

42 In a Cisco IOS device, where is the startup-configuration file stored?
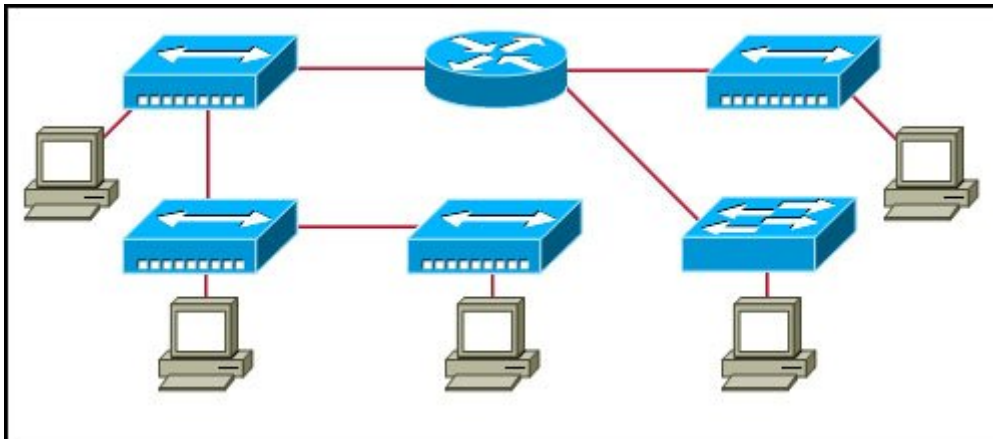
○ Flash

◉ NVRAM

○ RAM

○ ROM

43

Refer to the exhibit. What two facts can be determined about the exhibited topology? (Choose two.)

☑ A single broadcast domain is present

☐ Two logical address ranges are required.

☐ Three broadcast domains are shown.

☐ Four networks are needed.
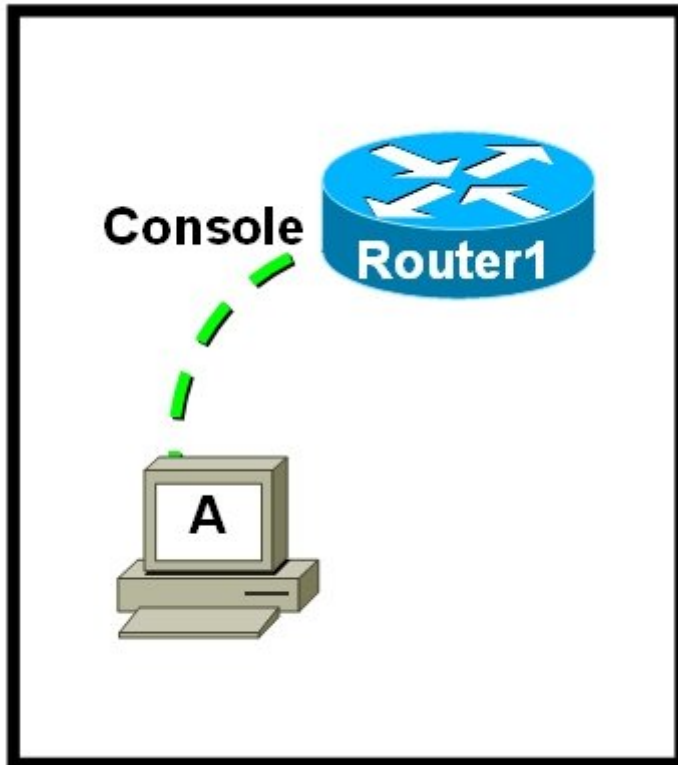
☑ Five collision domains exist.

44

Refer to the exhibit. Assume all devices are using default configurations. How many subnets are required to address the topology shown?
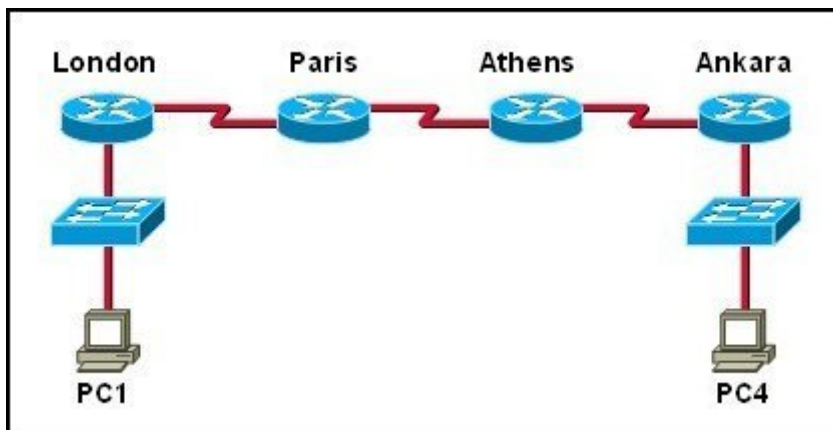
○ 1

◉ 3

○ 4

○ 5

○ 7

45

Refer to the exhibit. What is required on host A for a network technician to create the initial configuration on Router1?

- ○ an FTP client
- ○ a Telnet client
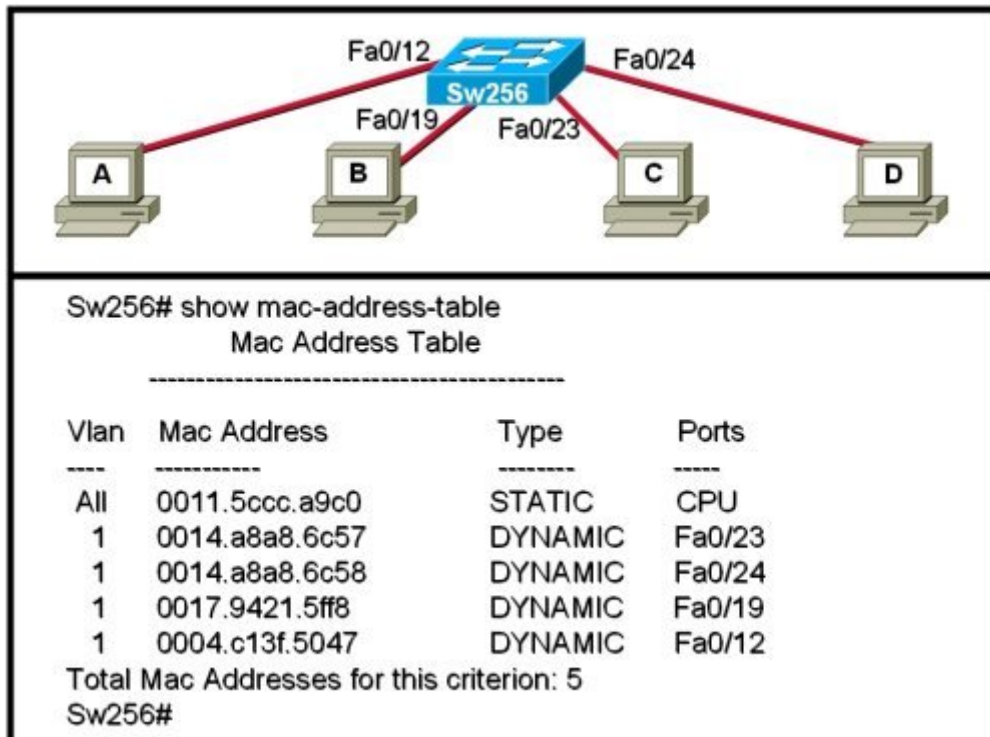- ◉ a terminal emulation program
- ○ a web browser

46

Refer to the exhibit. The **tracert** command is initiated from PC1 to PC4. Which device will send a response to the initial **tracert** from PC1?

- ○ Athens
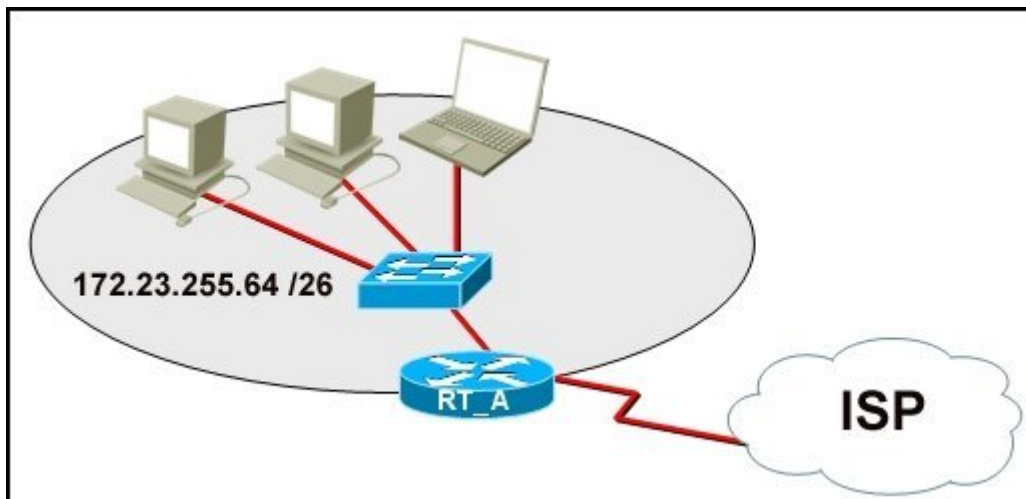- ○ Ankara
- ◉ London
- ○ Paris
- ○ PC4

47

Refer to the exhibit. When computer A sends a frame to computer D, what computers receive the frame?

- ⊙ only computer D
- ○ only computer A and computer D
- ○ only computer B, computer C, and computer D
- ○ all computers

48

Refer to the exhibit. What function does router RT_A need to provide to allow Internet access for hosts in this network?

- ⊙ address translation
- ○ DHCP services
- ○ ftpd
- ○ web server

```
B#show ip interface brief
Interface          IP-Address      OK? Method  Status                    Protocol
FastEthernet0/0    192.168.1.62    YES manual  up                        up

FastEthernet0/1    192.168.1.254   YES manual  administratively down     down

Serial0/0/0        192.168.1.2     YES manual  up                        up

Serial0/0/1        192.168.1.5     YES manual  up                        up

B#
```

Refer to the exhibit. The network containing router B is experiencing problems. A network associate has isolated the issue in thi
network to router B. What action can be preformed to correct the network issue?

○   issue the **clock rate** command on interface Serial 0/0/0

○   issue the **description** command on interface Serial 0/0/1

○   issue the **ip address** command on interface FastEthernet 0/0

◉   issue the **no shutdown** command on interface FastEthernet 0/1