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Assessment System

ERouting Final Exam - CCNA Exploration: Routing Protocols and Concepts (Version 4.0)

1 Which three statements are true regarding the encapsulation and de-encapsulation of packets when traveling through a router? (Choose three.)

- [x] The router modifies the TTL field, decrementing it by one.
- [ ] The router changes the source IP to the IP of the exit interface.
- [x] The router maintains the same source and destination IP.
- [x] The router changes the source physical address to the physical address of the exit interface.
- [ ] The router changes the destination IP to the IP of the exit interface.
- [ ] The router sends the packet out all other interfaces, besides the one it entered the router on.

2

```
A# show ip route
<output ommited>
Gateway of last resort is not set

S   10.0.0.0/8 [1/0] via 172.16.40.2
    64.0.0.0/16 is subnetted, 1 subnets
C       64.100.0.0 is directly connected, Serial0/1
C   128.107.0.0/16 is directly connected, Loopback2
    172.16.0.0/24 is subnetted, 1 subnets
C       172.16.40.0 is directly connected, Serial0/0
C   192.168.1.0/24 is directly connected, FastEthernet0/0
S   192.168.2.0/24 [1/0] via 172.16.40.2
C   198.133.219.0/24 is directly connected, Loopback0
A#
```

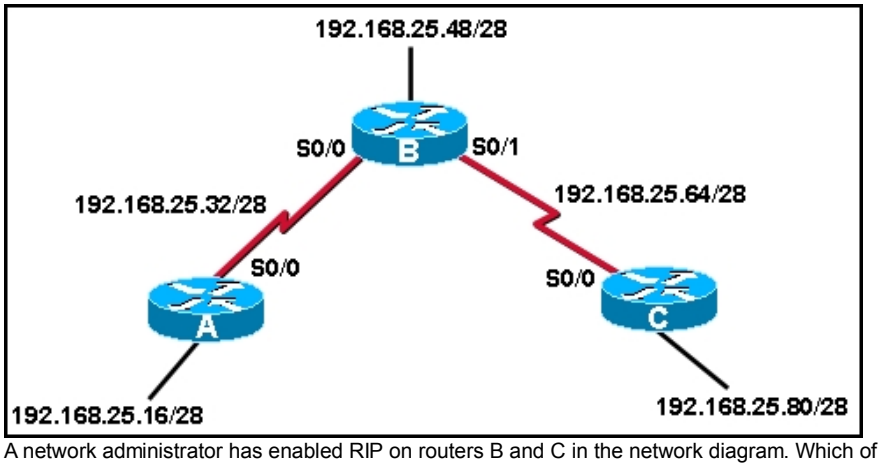
Refer to the exhibit. Packets destined to which two networks will require the router to perform a recursive lookup? (Choose two.)

- [x] 10.0.0.0/8
- [ ] 64.100.0.0/16
- [ ] 128.107.0.0/16
- [ ] 172.16.40.0/24
- [ ] 192.168.1.0/24
- [x] 192.168.2.0/24

3 Which two statements are correct about the split horizon with poison reverse method of routing loop prevention? (Choose two.)

- [ ] It is enabled by default on all Cisco IOS implementations.
- [x] It assigns a value that represents an infinite metric to the poisoned route.
- [x] It sends back the poisoned route update to the same interface from where it was received.
- [ ] It instructs routers to hold all changes that might affect routes, for a specified period of time.
- [ ] It limits the number of hops a packet can traverse through the network before it is discarded.

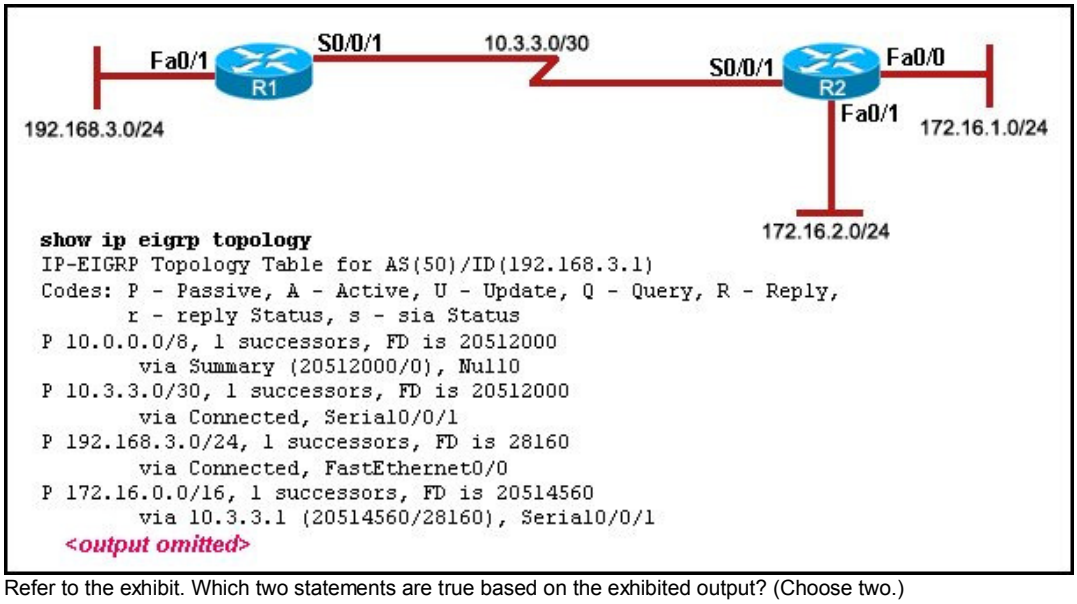
4



A network administrator has enabled RIP on routers B and C in the network diagram. Which of the following commands will prevent RIP updates from being sent to Router A?

- A(config)# **router rip**
  A(config-router)# **passive-interface S0/0**
- B(config)# **router rip**
  B(config-router)# **network 192.168.25.48**
  B(config-router)# **network 192.168.25.64**
- A(config)# **router rip**
  A(config-router)# **no network 192.168.25.32**
- B(config)# **router rip**
  B(config-router)# **passive-interface S0/0**
- A(config)# **no router rip**

5



Refer to the exhibit. Which two statements are true based on the exhibited output? (Choose two.)

- [ ] The administrative distance of EIGRP has been set to 50.
- [x] All routes are stable.
- [x] The **show ip eigrp topology** command has been run on R1.
- [ ] The serial interface between the two routers is down.
- [ ] Each route has one feasible successor.

6

```
Router1# show ip route

<some output omitted>

Gateway of last resort is not set

D      172.17.0.0/16 [100/156160] via 10.0.0.5, 00:00:39, FastEthernet0/0
O      172.16.0.0/16 [110/2] via 10.0.0.1, 00:00:15, FastEthernet0/1
C    10.0.0.0/30 is directly connected, FastEthernet0/1
C    10.0.0.4/30 is directly connected, FastEthernet0/0
     192.168.0.0/24 is subnetted, 1 subnets
O      192.168.0.16 [110/2] via 10.0.0.1, 00:00:15, FastEthernet0/1
```

Refer to the exhibit. Which three statements are true of the routing table for Router1? (Choose three.)

- ☐ The route to network 172.16.0.0 has an AD of 156160.
- ☐ Network 192.168.0.16 can best be reached using FastEthernet0/0.
- ☑ The AD of EIGRP routes has been manually changed to a value other than the default value.
- ☑ Router1 is running both the EIGRP and OSPF routing process.
- ☐ Network 172.17.0.0 can only be reached using a default route.
- ☑ No default route has been configured.

7 Which two router component and operation pair are correctly described? (Choose two.)

- ☐ DRAM - loads the bootstrap
- ☐ RAM - stores the operating system
- ☐ Flash - executes diagnostics at bootup
- ☑ NVRAM - stores the configuration file
- ☐ ROM - stores the backup configuration file
- ☑ POST - runs diagnostics on hardware modules

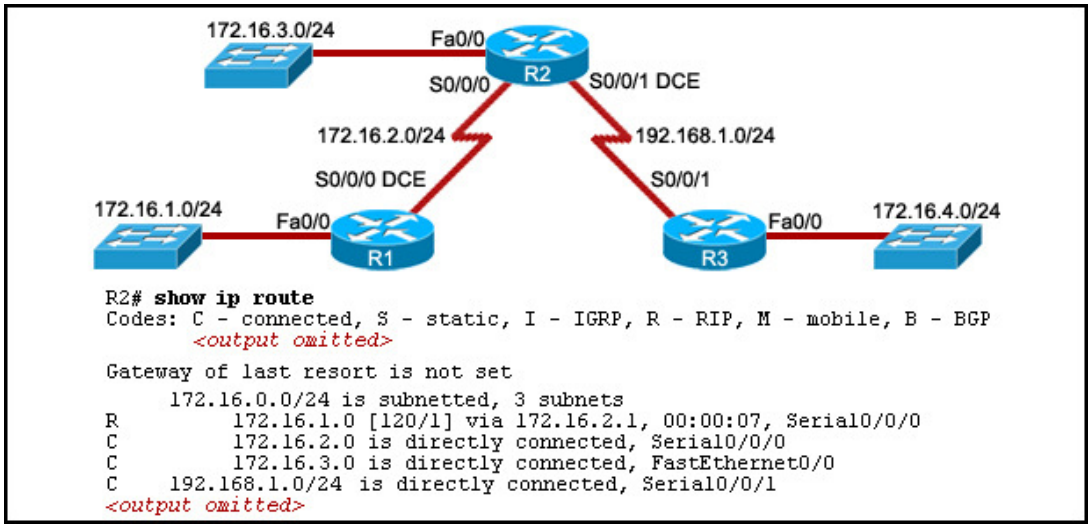
8 What are two tasks that must be completed before two routers can use OSPF to form a neighbor adjacency? (Choose two.)

- ☐ The routers must elect a designated router.
- ☑ The routers must agree on the network type.
- ☑ The routers must use the same dead interval.
- ☐ The routers must exchange link state requests.
- ☐ The routers must exchange database description packets.

9 What are two functions of a router? (Choose two.)

- ☑ It forwards data packets toward their destination.
- ☐ It forwards the packet to the destination if the TTL value is 0.
- ☐ It changes the destination IP address of data packets before forwarding them to an exit interface.
- ☐ It determines the best path based on the destination MAC address.
- ☑ It acts as an intersection between multiple IP networks.

10




```
R2# show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       <output omitted>

Gateway of last resort is not set
     172.16.0.0/24 is subnetted, 3 subnets
R         172.16.1.0 [120/1] via 172.16.2.1, 00:00:07, Serial0/0/0
C         172.16.2.0 is directly connected, Serial0/0/0
C         172.16.3.0 is directly connected, FastEthernet0/0
C    192.168.1.0/24 is directly connected, Serial0/0/1
<output omitted>
```

Refer to the exhibit. Which statement is true about router R2?

- The routing table content indicates that interface S0/0/0 is administratively down.
- The route for 172.16.1.0 is a static route.
- A packet that is destined for a host on the 172.16.3.0 network is forwarded without performing a routing table lookup.
- The packets that are routed to network 172.16.1.0 require two routing table lookups.

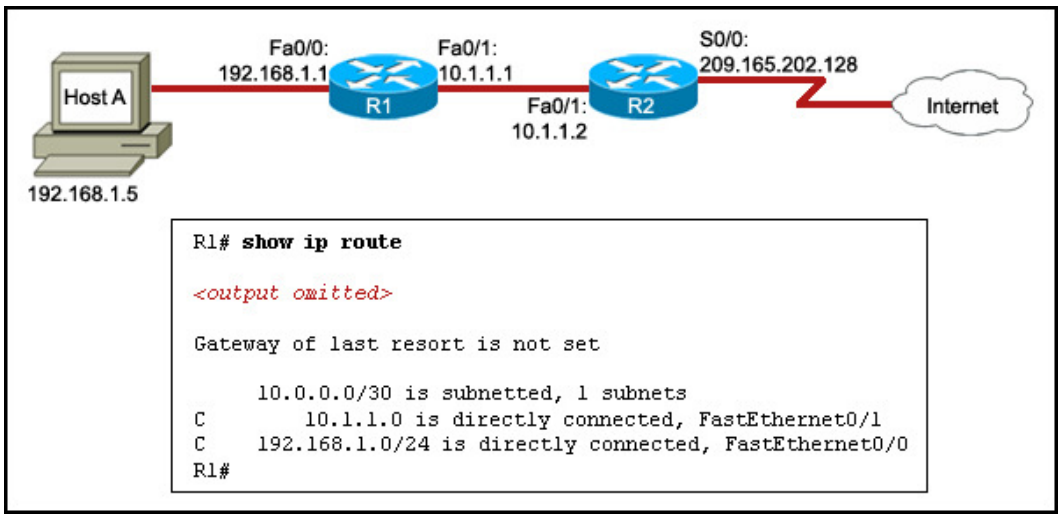
11

```
R1# show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       NI - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       EI - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i  - IS-IS, LI - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       *  - candidate default, U - per-user static route, o - ODR
       P  - periodic downloaded static route

Gateway of last resort is not set

     172.16.0.0/24 is subnetted, 3 subnets
S         172.16.1.0 [1/0] via 172.16.2.2
C         172.16.2.0 is directly connected, Serial0/0/0
C         172.16.3.0 is directly connected, FastEthernet0/0
S    192.168.1.0/24 [1/0] via 172.16.2.2
S    192.168.2.0/24 is directly connected, Serial0/0/0
S*   0.0.0.0/0 is directly connected, FastEthernet0/0
<output omitted>
```

Refer to the exhibit. The output of the **show ip route** command for router R1 is displayed. What action will the router take for a packet that is destined for 192.168.1.5?

- It will drop the packet.
- It will forward the packet to interface Serial0/0/0.
- It will determine the route for the packet through a routing protocol.
- It will forward the packet to the default gateway.

12




```
R1# show ip route

<output omitted>

Gateway of last resort is not set

     10.0.0.0/30 is subnetted, 1 subnets
C       10.1.1.0 is directly connected, FastEthernet0/1
C    192.168.1.0/24 is directly connected, FastEthernet0/0
R1#
```

Refer to the exhibit. Although R2 is configured correctly, host A is unable to access the Internet. Which two static routes can be configured on R1 to enable Internet connectivity for host A? (Choose two.)

- [ ] **ip route 0.0.0.0 0.0.0.0 Fa0/0**
- [x] **ip route 0.0.0.0 0.0.0.0 Fa0/1**
- [ ] **ip route 0.0.0.0 0.0.0.0 10.1.1.1**
- [x] **ip route 0.0.0.0 0.0.0.0 10.1.1.2**
- [ ] **ip route 209.165.202.0 255.255.255.0 10.1.1.1**
- [ ] **ip route 209.165.202.0 255.255.255.0 10.1.1.2**

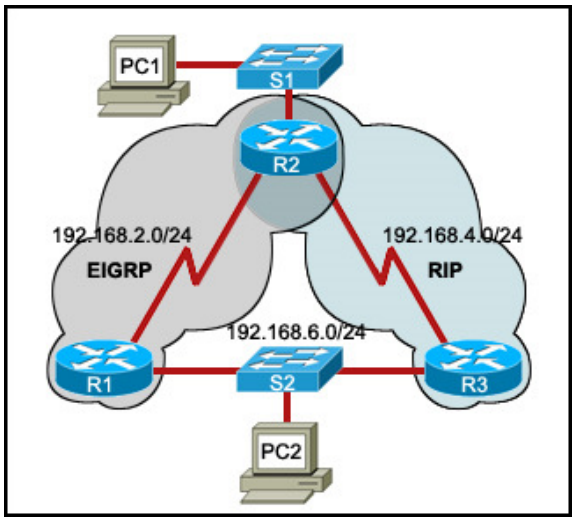
13

```
Router1# show cdp neighbors
Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater
Device ID        Local Intrfce     Holdtme    Capability  Platform     Port ID
Router2          Ser0/0/0          133         R S I       1841         Ser 0/0/0
Switch1          Fas 0/0           162         S I         WS-C2960-2   Fas 0/1
Router1#

Router2# show cdp neighbors
Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater
Device ID        Local Intrfce     Holdtme    Capability  Platform     Port ID
Router3          Ser0/0/1          133        R S I       1841           Ser 0/0/1
Router1          Ser0/0/0          133        R S I       1841           Ser 0/0/0
Switch2          Fas 0/0           162        S I         WS-C2960-2   Fas 0/1
Router2#

Router3# show cdp neighbors
Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater
Device ID        Local Intrfce   Holdtme    Capability  Platform     Port ID
Router2          Ser0/0/1        133        R S I       1841         Ser 0/0/1
Router3#
```

Refer to the exhibit. Which two facts can be derived from this output? (Choose two.)

- [x] Three network devices are directly connected to Router2.
- [x] The serial interface between Router2 and Router3 is up.
- [ ] Router1 and Router3 are directly connected.
- [ ] Six devices are up and running on the network.
- [ ] Layer 3 functionality between routers is configured properly.

14



Refer to the exhibit. Routers R1 and R3 use different routing protocols with default administrative distance values. All devices are properly configured and the destination network is advertised by both protocols.

Which path will be used to transmit the data packets between PC1 and PC2?

- (•) The packets will travel via R2-R1.
- ( ) The packets will travel via R2-R3.
- ( ) The traffic will be load-balanced between two paths — via R2-R1 and via R2-R3.
- ( ) The packets will travel via R2-R3, and the other path via R2-R1 will be retained as the backup path.

15 A network administrator uses the RIP routing protocol to implement routing within an autonomous system. What are two characteristics of this protocol? (Choose two.)

- [x] It uses the Bellman-Ford algorithm to determine the best path.
- [ ] It displays an actual map of the network topology.
- [ ] It offers rapid convergence in large networks.
- [x] It periodically sends complete routing tables to all connected devices.
- [ ] It is beneficial in complex and hierarchically designed networks.

16

```
R2# show ip route
<output omitted>

Gateway of last resort is not set

R    192.168.1.0/24 [120/1] via 192.168.2.1, 00:00:24, Serial0/0
C    192.168.2.0/24 is directly connected, Serial0/0
C    192.168.3.0/24 is directly connected, FastEthernet0/0
C    192.168.4.0/24 is directly connected, Serial0/1
R    192.168.5.0/24 [120/1] via 192.168.4.1, 00:00:26, Serial0/1
R    192.168.6.0/24 [120/1] via 192.168.2.1, 00:00:24, Serial0/0
                            [120/1] via 192.168.4.1, 00:00:26, Serial0/1
R    192.168.7.0/24 [120/1] via 192.168.4.1, 00:00:26, Serial0/1
R    192.168.8.0/24 [120/2] via 192.168.4.1, 00:00:26, Serial0/1
<output omitted>
```

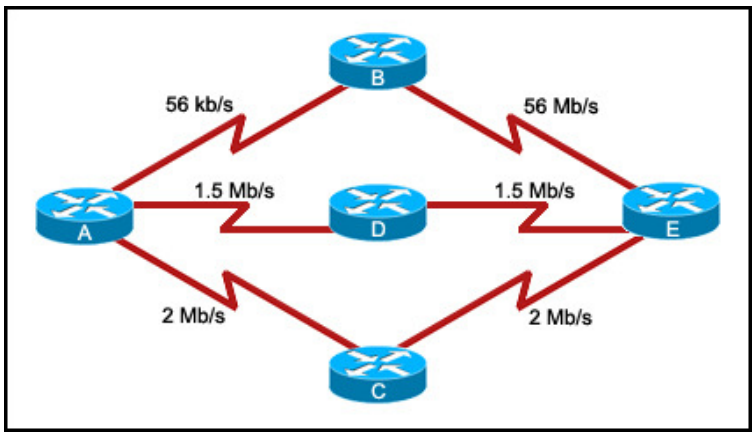
Refer to the exhibit. What is the meaning of the highlighted value 2?

- ○ It is the administrative distance of the routing protocol.
- ◉ It is the number of hops between R2 and the 192.168.8.0/24 network.
- ○ It is the value used by the DUAL algorithm to determine the bandwidth for the link.
- ○ It is the convergence time measured in seconds.

17 In a lab test environment, a router has learned about network 172.16.1.0 through four different dynamic routing processes. Which route will be used to reach this network?

- ◉ D 172.16.1.0/24 [90/2195456] via 192.168.200.1, 00:00:09, Serial0/0/0
- ○ O 172.16.1.0/24 [110/1012] via 192.168.200.1, 00:00:22, Serial0/0/0
- ○ R 172.16.1.0/24 [120/1] via 192.168.200.1, 00:00:17, Serial0/0/0
- ○ I 172.16.1.0/24 [100/1192] via 192.168.200.1, 00:00:09, Serial0/0/0

18



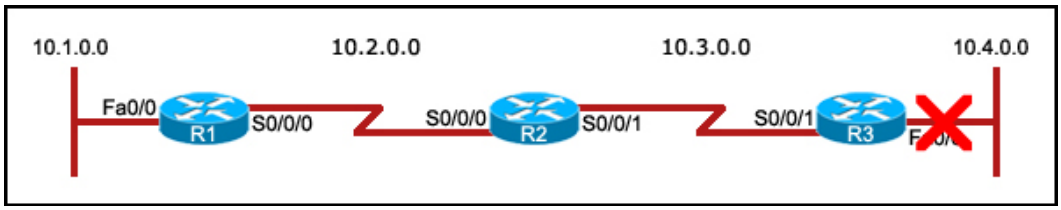
Refer to the exhibit. The routers are properly configured using a dynamic routing protocol with default settings, and the network is fully converged. Router A is forwarding data to router E. Which statement is true about the routing path?

- ◉ If the network uses the RIP protocol, router A will determine that all paths have equal cost.
- ○ If the network uses the RIP protocol, router A will update only the A-C-E path in its routing table.
- ○ If the network uses the EIGRP routing protocol, router A will determine that path A-D-E has the lowest cost.
- ○ If both RIP and EIGRP protocols are configured on router A, the router will use the route information that is learned by the RIP routing protocol.

19 Which statement is true about the RIPv1 protocol?

- ○ It is a link-state routing protocol.
- ◉ It excludes subnet information from the routing updates.
- ○ It uses the DUAL algorithm to insert backup routes into the topology table.
- ○ It uses classless routing as the default method on the router.

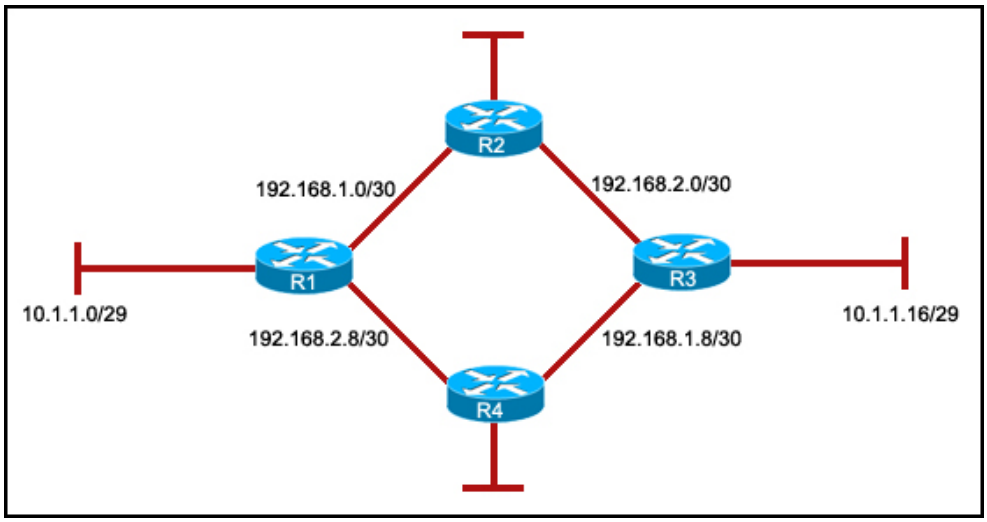
20



Refer to the exhibit. The 10.4.0.0 network fails. What mechanism prevents R2 from receiving false update information regarding the 10.4.0.0 network?

- (•) split horizon
- ( ) hold-down timers
- ( ) route poisoning
- ( ) triggered updates

21



Refer to the exhibit. All routers are running RIPv1. The two networks 10.1.1.0/29 and 10.1.1.16/29 are unable to access each other. What can be the cause of this problem?

- ( ) Because RIPv1 is a classless protocol, it does not support this access.
- (•) RIPv1 does not support discontiguous networks.
- ( ) RIPv1 does not support load balancing.
- ( ) RIPv1 does not support automatic summarization.

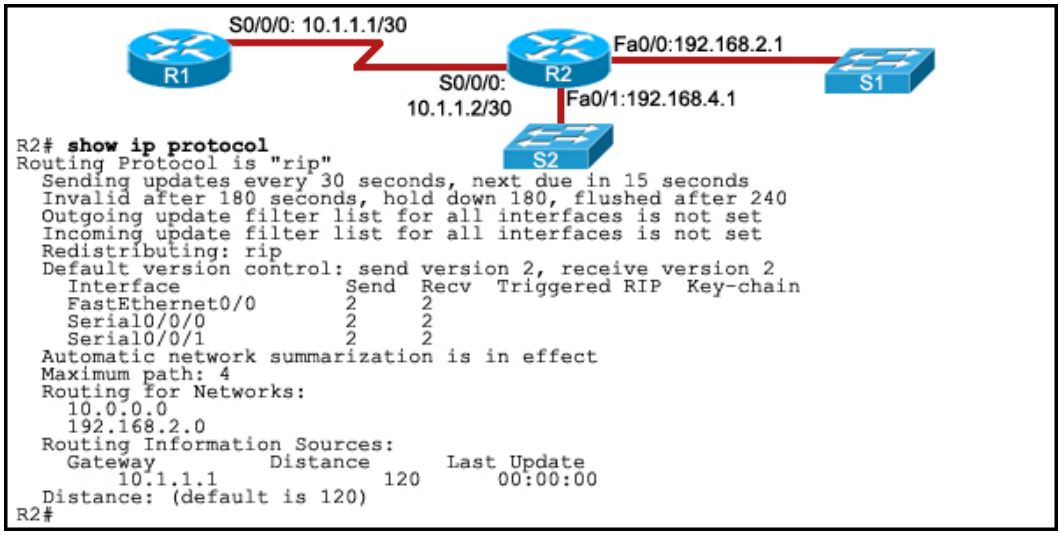
22 How does route poisoning prevent routing loops?

- ( ) New routing updates are ignored until the network has converged.
- (•) Failed routes are advertised with a metric of infinity.
- ( ) A route is marked as unavailable when its Time to Live is exceeded.
- ( ) The unreachable route is cleared from the routing table after the invalid timer expires.

23 Which statement is true about the metrics used by routing protocols?

- (•) A metric is a value used by a particular routing protocol to compare paths to remote networks.
- ( ) A common metric is used by all routing protocols.
- ( ) The metric with the highest value is installed in the routing table.
- ( ) The router may use only one parameter at a time to calculate the metric.

24



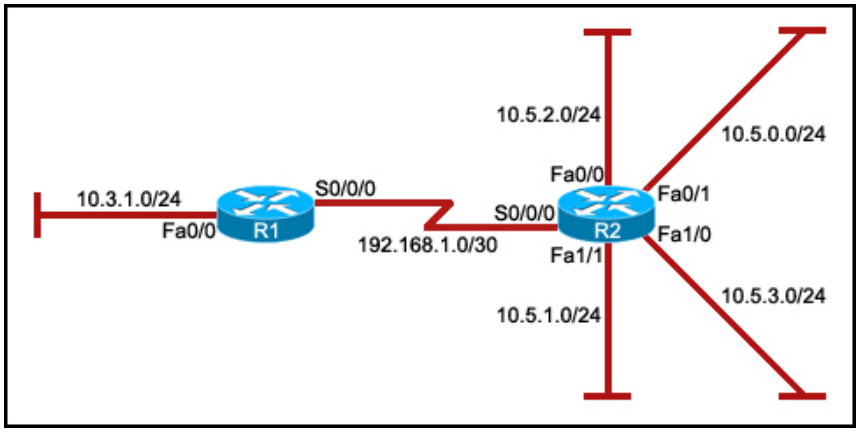

```
R2# show ip protocol
Routing Protocol is "rip"
  Sending updates every 30 seconds, next due in 15 seconds
  Invalid after 180 seconds, hold down 180, flushed after 240
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Redistributing: rip
  Default version control: send version 2, receive version 2
    Interface             Send  Recv  Triggered RIP  Key-chain
    FastEthernet0/0       2     2
    Serial0/0/0           2     2
    Serial0/0/1           2     2
  Automatic network summarization is in effect
  Maximum path: 4
  Routing for Networks:
    10.0.0.0
    192.168.2.0
  Routing Information Sources:
    Gateway         Distance      Last Update
        10.1.1.1         120      00:00:00
  Distance: (default is 120)
R2#
```

Refer to the exhibit. Both routers are using the RIPv2 routing protocol and static routes are undefined. R1 can ping 192.168.2.1 and 10.1.1.2, but is unable to ping 192.168.4.1.

What is the reason for the ping failure?

- The serial interface between two routers is down.
- R2 is not forwarding the routing updates.
- The 192.168.4.0 network is not included in the RIP configuration of R2.
- RIPv1 needs to be configured.

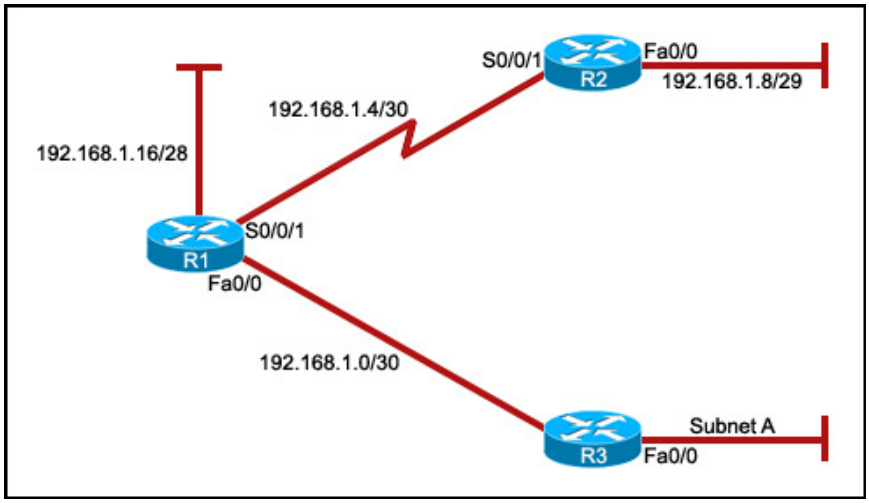
25



Refer to the exhibit. A network administrator wants to reduce the size of the routing table of R1. Which partial routing table entry in R1 represents the route summary for R2, without including any additional subnets?

- 10.0.0.0/16 is subnetted, 1 subnets
  D 10.5.0.0[90/205891] via 192.168.1.2, S0/0/0
- 10.0.0.0/24 is subnetted, 4 subnets
  D 10.5.0.0[90/205198] via 192.168.1.2, S0/0/0
- 10.0.0.0/22 is subnetted, 1 subnets
  D 10.5.0.0[90/205901] via 192.168.1.2, S0/0/0
- 10.0.0.0/8 is subnetted, 4 subnets
  D 10.5.0.0[90/205001] via 192.168.1.2, S0/0/0

26



Refer to the exhibit. An administrator is adding a new subnet of 50 hosts to R3. Which subnet address should be used for the new subnet that provides enough addresses while wasting a minimum of addresses?

- 192.168.1.0/24
- 192.168.1.48 /28
- 192.168.1.32/27
- 192.168.1.64/26 (selected)

27

```
R1# show ip route
<output omitted>
Gateway of last resort is 0.0.0.0 to network 0.0.0.0
     172.16.0.0/23 is subnetted, 1 subnets
C       172.16.2.0 is directly connected, FastEthernet0/1
     10.0.0.0/8 is variably subnetted, 3 subnets, 3 masks
C       10.1.1.8/29 is directly connected, Serial0/0/0
C       10.1.1.0/30 is directly connected, Serial0/0/1
C       10.1.1.96/27 is directly connected, Serial0/1/0
C    192.168.1.0/24 is directly connected, FastEthernet0/0
<output omitted>
```

Refer to the exhibit. How many routes are ultimate routes?

- 3
- 4
- 5 (selected)
- 7

28


```
Router2# show ip route
<output omitted>
10.0.0.0/30 is subnetted, 4 subnets
R    10.10.10.0 [120/1] via 10.10.10.6, 00:00:09, Serial0/0/0
C    10.10.10.4 is directly connected, Serial0/0/0
C    10.10.10.8 is directly connected, Serial0/0/1
R    10.10.10.12 [120/1] via 10.10.10.10, 00:00:09, Serial0/0/1
     172.16.0.0/16 is variably subnetted, 10 subnets, 5 masks
C    172.16.1.0/27 is directly connected, FastEthernet0/0
R    172.16.1.32/28 [120/2] via 10.10.10.10, 00:00:09, Serial0/0/1
R    172.16.1.192/26 [120/1] via 10.10.10.6, 00:00:09, Serial0/0/0
<output omitted>
```

Refer to the exhibit. Which router is advertising subnet 172.16.1.32/28?

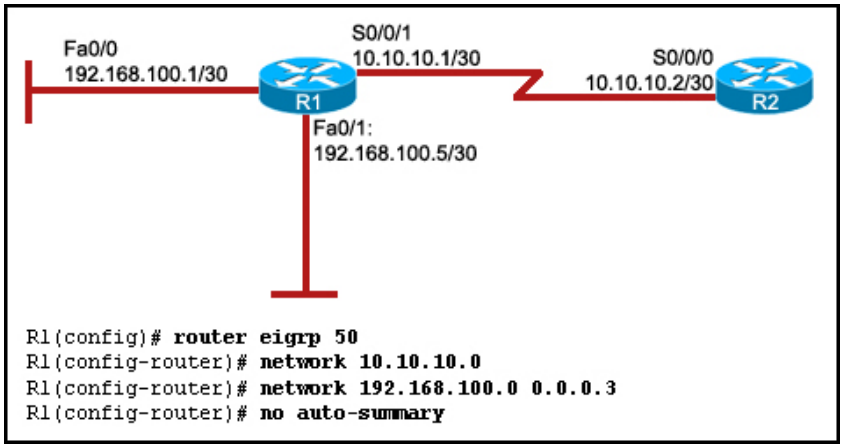
- Router1
- Router2
- Router3
- Router4 (selected)

29 Which two statements are true about the EIGRP successor route? (Choose two.)

- ☐ It is saved in the topology table for use if the primary route fails.

- [ ] It may be backed up by a feasible successor route.
- [x] It is used by EIGRP to forward traffic to the destination.
- [ ] It is flagged as *active* in the routing table.
- [ ] After the discovery process has occurred, the successor route is stored in the neighbor table.

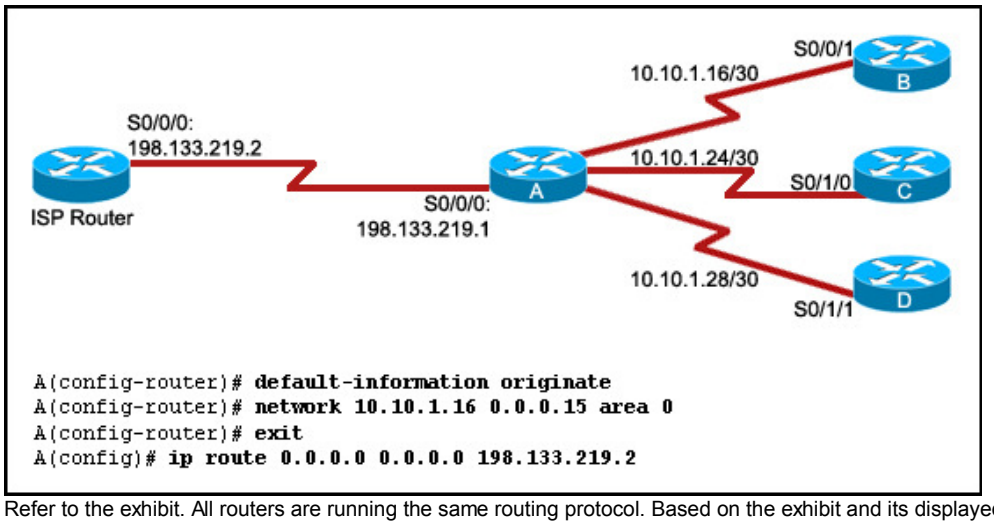
30



Refer to the exhibit. R2 is configured correctly. The network administrator has configured R1 as shown. Which two facts can be deduced from the configuration of R1? (Choose two.)

- [x] R1 will forward the route information for subnet 192.168.100.0/30.
- [ ] The administrative distance has been set to 50 on R1.
- [x] R1 will not forward route information for subnet 192.168.100.4.0/30.
- [ ] R1 will forward the EGRP update for subnet 10.10.10.0/30.
- [ ] Autosummarization must be enabled.

31



Refer to the exhibit. All routers are running the same routing protocol. Based on the exhibit and its displayed commands, which statement is true?

- ○ Routers B, C, and D have no access to the Internet.
- ◉ The link to the ISP will be excluded from the routing protocol process.
- ○ A default route must be configured on every router.
- ○ The wildcard mask is incorrectly configured.

32 Which two components are used to determine the router ID in the configuration of the OSPF routing process? (Choose two.)

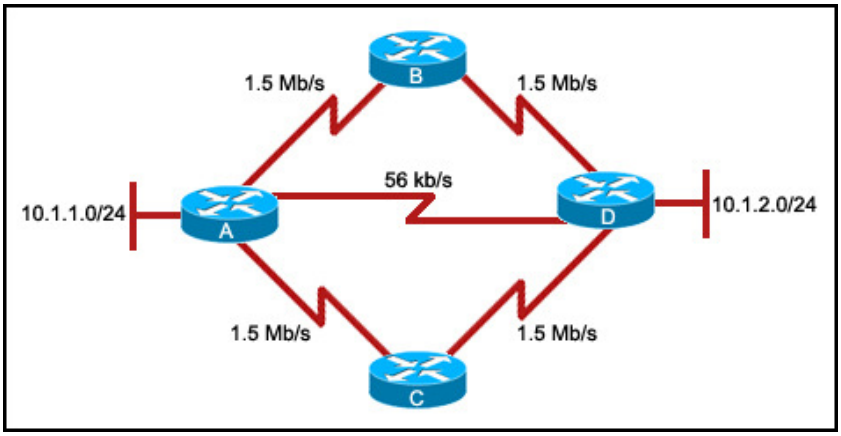
- [ ] the IP address of the first FastEthernet interface
- [x] the highest IP address of any logical interface
- [x] the highest IP address of any physical interface
- [ ] the default gateway IP address
- [ ] the priority value of 1 on any physical interface


```
R1# show ip ospf interface Fa0/0
FastEthernet0/0 is up, line protocol is up
Internet address 192.168.100.2/24, Area 0
Process ID 1, Router ID 192.168.31.33, Network Type BROADCAST,
 Cost: 10
Transmit Delay is 1 sec, State DR, Priority 1
Designated Router (ID) 192.168.5.39, Interface address 192.168.100.2
No backup designated router on this network
Time intervals configured, Hello 5, Dead 20, Wait 20, Retransmit 5

R2# show ip ospf interface Fa0/0
FastEthernet0/0 is up, line protocol is up
Internet address 192.168.100.1/24, Area 1
Process ID 2, Router ID 192.168.31.11, Network Type BROADCAST,
 Cost: 10
Transmit Delay is 1 sec, State DR, Priority 1
Designated Router (ID) 192.168.5.31, Interface address 192.168.100.1
No backup designated router on this network
Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
```

Refer to the exhibit. R1 and R2 are unable to establish an adjacency. What two configuration changes will correct the problem? (Choose two.)

- ☐ Set a lower priority on R2.
- ☑ Configure the routers in the same area.
- ☐ Set a lower cost on R2 compared to R1.
- ☐ Add a backup designated router to the network.
- ☑ Match the hello and dead timers on both routers.

34



Refer to the exhibit. All routers are properly configured to use the EIGRP routing protocol with default settings, and the network is fully converged. Which statement correctly describes the path that the traffic will use from the 10.1.1.0/24 network to the 10.1.2.0/24 network?

- ○ It will use the A-D path only.
- ○ It will use the path A-D, and the paths A-C-D and A-B-D will be retained as the backup paths.
- ○ It will use all the paths equally in a round-robin fashion.
- ◉ The traffic will be load-balanced between A-B-D and A-C-D.

35 Which routing protocol maintains a topology table separate from the routing table?

- ○ IGRP
- ○ RIPv1
- ○ RIPv2
- ◉ EIGRP

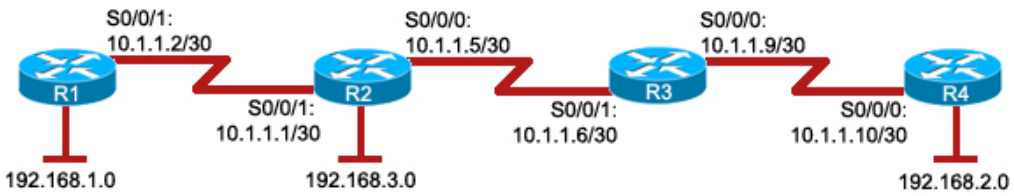
36

```
R1# show ip route
<output omitted>

Gateway of last resort is 10.3.3.1 to network 0.0.0.0

     10.0.0.0/30 is subnetted, 1 subnets
C    10.3.3.0 is directly connected, Serial0/0/0
C    192.168.1.0/24 is directly connected, FastEthernet0/0
S*   0.0.0.0/0 [1/0] via 10.3.3.1
R1#

R2# show ip route
<output omitted>

Gateway of last resort is 10.3.3.2 to network 0.0.0.0

     172.16.0.0/24 is subnetted, 1 subnets
C    172.16.1.0 is directly connected, FastEthernet0/0
     10.0.0.0/30 is subnetted, 1 subnets
C    10.3.3.0 is directly connected, Serial0/0/0
S*   0.0.0.0/0 [1/0] via 10.3.3.2
R2#
```

Refer to the exhibit. A ping between the serial interfaces of R1 and R2 is successful, but a ping between their FastEthernet interfaces fails. What is the reason for this problem?

- The FastEthernet interface of R1 is disabled.
- One of the default routes is configured incorrectly.
- A routing protocol is not configured on both routers.
- The default gateway has not been configured on both routers.

37

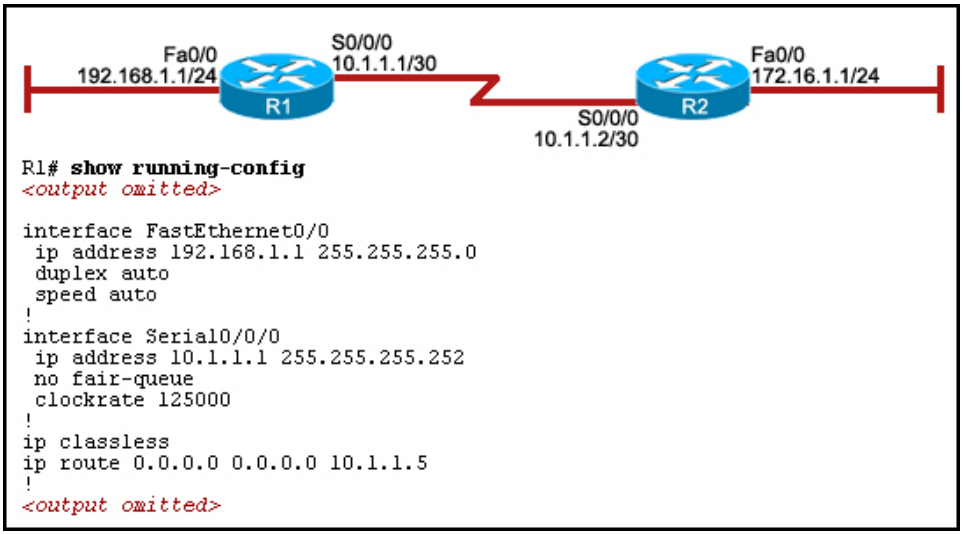



```
R2# show ip route
<output omitted>
   10.0.0.0/30 is subnetted, 3 subnets
C     10.1.1.0 is directly connected, Serial0/0/1
C     10.1.1.4 is directly connected, Serial0/0/0
C     192.168.3.0/24 is directly connected, FastEthernet0/0
R     10.1.1.8 [120/1] via 10.1.1.6, 1d00h, Serial0/0/0
R     192.168.1.0 [120/1] via 10.1.1.2, 1ea0h, Serial0/0/1
S*    0.0.0.0/0 is directly connected,  Serial0/0/1
<output omitted>
```

Refer to the exhibit. What action will R2 take for a packet that is destined for 192.168.2.0?

- It will drop the packet.
- It will forward the packet via the S0/0/0 interface.
- It will forward the packet via the Fa0/0 interface.
- It will forward the packet to R1.

38

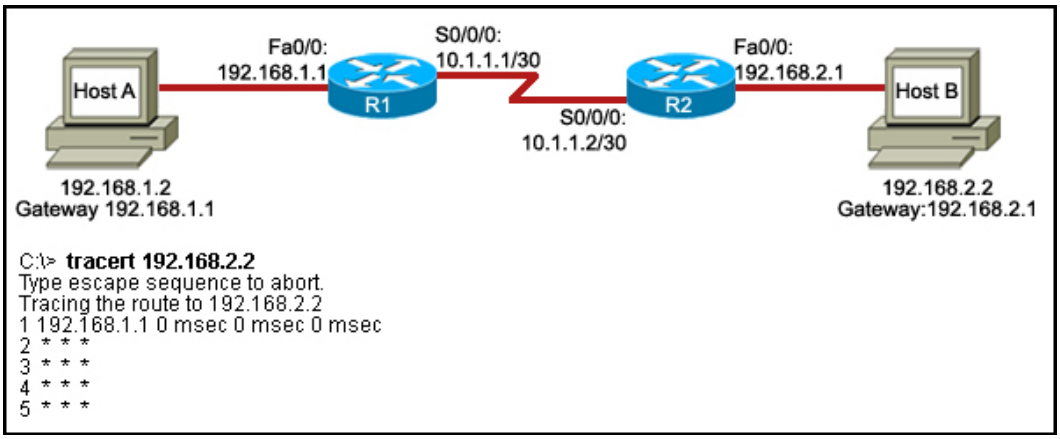



```
R1# show running-config
<output omitted>

interface FastEthernet0/0
 ip address 192.168.1.1 255.255.255.0
 duplex auto
 speed auto
!
interface Serial0/0/0
 ip address 10.1.1.1 255.255.255.252
 no fair-queue
 clockrate 125000
!
ip classless
ip route 0.0.0.0 0.0.0.0 10.1.1.5
!
<output omitted>
```

Refer to the exhibit. A network administrator has configured R1 as shown, and all interfaces are functioning correctly. A ping from R1 to 172.16.1.1 fails. What could be the cause of this problem?

- ○ The serial interface on R1 is configured incorrectly.
- ◉ The default route is configured incorrectly.
- ○ The **default-information originate** command must be issued on R1.
- ○ Autosummarization must be disabled on R1.

39




```
C:\> tracert 192.168.2.2
Type escape sequence to abort.
Tracing the route to 192.168.2.2
1 192.168.1.1 0 msec 0 msec 0 msec
2 * * *
3 * * *
4 * * *
5 * * *
```

Refer to the exhibit. All interfaces are addressed and functioning correctly. The network administrator runs the **tracert** command on host A. Which two facts could be responsible for the output of this command? (Choose two.)

- ☑ The entry for 192.168.2.0/24 is missing from the routing table of R1.
- ☑ The entry for 192.168.1.0/24 is missing from the routing table of R2.
- ☐ The entry for 10.1.1.0/30 is missing from the routing table of R1.
- ☐ The entry for 10.1.1.0/30 is missing from the routing table of R2.
- ☐ The entry for 192.168.1.0/24 is missing from the routing table of R1.
- ☐ The entry for 192.168.2.0/24 is missing from the routing table of R2.

40 A router has learned two equal cost paths to a remote network via the EIGRP and RIP protocols. Both protocols are using their default configurations. Which path to the remote network will be installed in the routing table?

- ◉ the path learned via EIGRP
- ○ the path learned via RIP
- ○ the path with the highest metric value
- ○ both paths with load balancing

41

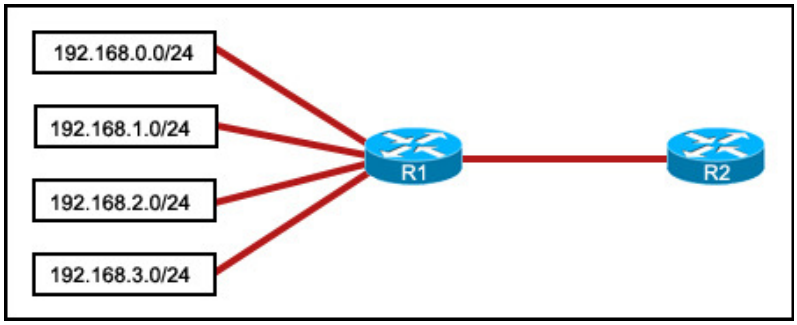
```
R1# show ip route
<output omitted>
Gateway of last resort is not set
172.16.0.0/24 is subnetted, 1 subnets
S       172.16.1.0 is directly connected, Serial0/0/0
     10.0.0.0/30 is subnetted, 1 subnets
C       10.1.1.0 is directly connected, Serial0/0/0
C    192.168.1.0/24 is directly connected, FastEthernet0/0
R1#

R2# show ip route
<output omitted>
Gateway of last resort is 10.3.3.2 to network 0.0.0.0
     172.16.0.0/24 is subnetted, 1 subnets
C       172.16.1.0 is directly connected, FastEthernet0/0
     10.0.0.0/30 is subnetted, 2 subnets
C       10.3.3.0 is directly connected, Serial0/0/1
C       10.1.1.0 is directly connected, Serial0/0/0
S    192.168.1.0/24 is directly connected, Serial0/0/0
S*   0.0.0.0/0 [1/0] via 10.3.3.2
R2#

R3# show ip route
<output omitted>
Gateway of last resort is 10.3.3.1 to network 0.0.0.0
     10.0.0.0/30 is subnetted, 1 subnets
C       10.3.3.0 is directly connected, Serial0/0/1
C    192.168.3.0/24 is directly connected, FastEthernet0/0
S*   0.0.0.0/0 [1/0] via 10.3.3.1
R3#
```

Refer to the exhibit. The network has three connected routers: R1, R2, and R3. The routes of all three routers are displayed. All routers are operational and pings are not blocked on this network.

Which ping will fail?

- from R1 to 172.16.1.1
- from R1 to 192.168.3.1
- from R2 to 192.168.1.1
- from R2 to 192.168.3.1

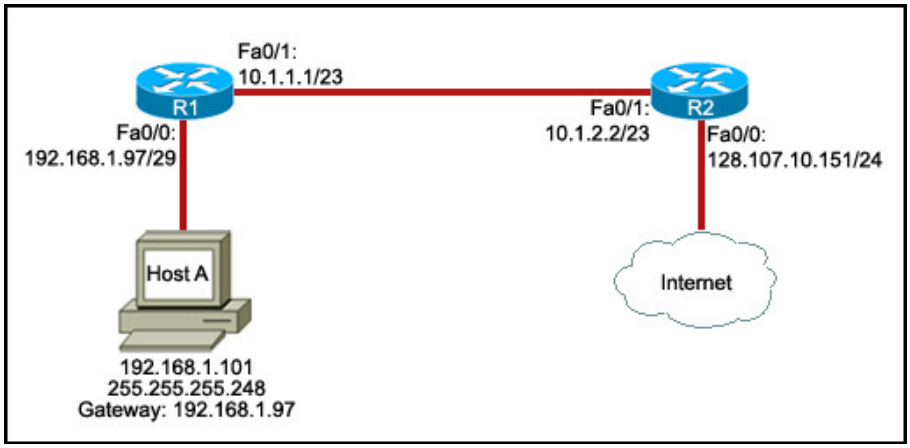
42



Refer to the exhibit. Which summarization should R1 use to advertise its networks to R2?

- 192.168.1.0/24
- 192.168.0.0/24
- 192.168.0.0/22
- 192.168.1.0/22

43

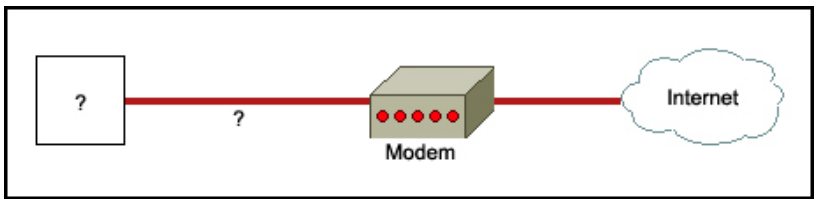


Refer to the exhibit. Host A is unable to access the Internet. What is the reason for this?

- The IP address of host A is incorrect.
- The default gateway of host A is incorrect.
- The Fa0/1 interfaces of the two routers are configured for different subnets.

- The subnet mask for the Fa0/0 interface of R1 is incorrect.

44



Refer to the exhibit. Which two components are required to complete the configuration? (Choose two.)

- [ ] a CSU/DSU device
- [x] a DTE device
- [ ] a DCE device
- [ ] a crossover cable
- [x] a V.35 cable

45 A router boots and enters setup mode. What is the reason for this?

- The IOS image is corrupt.
- Cisco IOS is missing from flash memory.
- (•) The configuration file is missing from NVRAM.
- The POST process has detected hardware failure.

46

```
R1(config)# line console 0
R1(config-line)# password Cisco001
R1(config-line)# login
R1(config-line)# exit
R1(config)# enable password Cisco123
R1(config)# enable secret Cisco789
R1(config)# line vty 0 4
R1(config-line)# password Cisco901
R1(config-line)# login
R1(config-line)# exit
```

Refer to the exhibit. A network administrator is accessing router R1 from the console port. Once the administrator is connected to the router, which password should the administrator enter at the R1> prompt to access the privileged EXEC mode?

- Cisco001
- Cisco123
- (•) Cisco789
- Cisco901

47

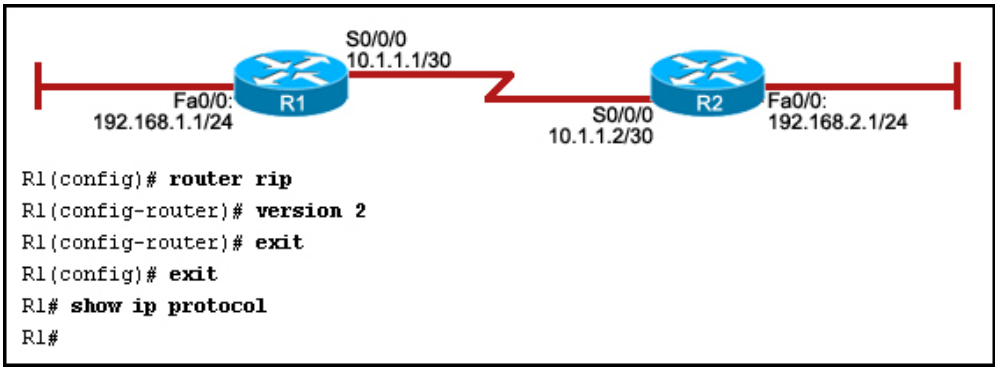
```
R1# debug ip rip
RIP protocol debugging is on
R1#
*Mar 24 19:13:10.118: RIP: sending v2 update to 224.0.0.9 via Serial0/0/1 (10.2.2.1)
*Mar 24 19:13:10.118: RIP: build update entries
*Mar 24 19:13:10.118:   10.0.0.0/8 via 0.0.0.0, metric 2, tag 0
*Mar 24 19:13:10.118:   172.16.1.0/24 via 0.0.0.0, metric 2, tag 0
*Mar 24 19:13:10.118:   192.168.1.0/24 via 0.0.0.0, metric 1, tag 0
*Mar 24 19:13:10.118:   192.168.9.0/24 via 0.0.0.0, metric 1, tag 0
*Mar 24 19:13:14.926: RIP: sending v2 update to 224.0.0.9 via Serial0/0/0 (192.168.1.1)
*Mar 24 19:13:14.926: RIP: build update entries
*Mar 24 19:13:14.926:   10.0.0.0/8 via 0.0.0.0, metric 1, tag 0
*Mar 24 19:13:14.926:   192.168.9.0/24 via 0.0.0.0, metric 1, tag 0

*Mar 24 19:13:23.470: RIP: received v2 update from 192.168.1.2 on Serial0/0/0
*Mar 24 19:13:23.470:      10.0.0.0/8 via 0.0.0.0 in 1 hops
*Mar 24 19:13:23.470:      172.16.1.0/24 via 0.0.0.0 in 1 hops
```

Refer to the exhibit. While trying to diagnose a routing problem in the network, the network administrator runs the **debug ip rip** command. What can be determined from the output of this command?

- The router will be unable to ping 192.168.1.2.
- The router has two interfaces that participate in the RIP process.

- The router will forward the updates for 192.168.1.0 on interface Serial0/0/1.
- The router is not originating routes for 172.16.1.0.

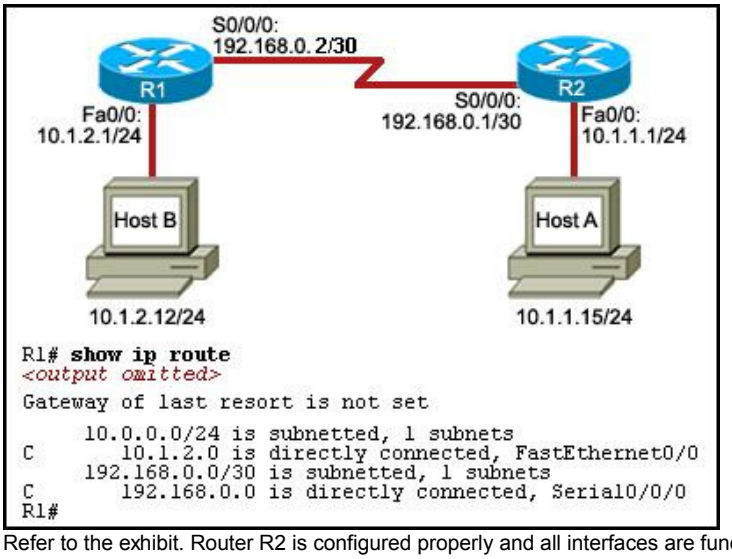
48



Refer to the exhibit. To implement the RIPv2 protocol, the network administrator runs the commands as displayed. However, the **show ip protocol** command fails to display any output. How can the administrator solve the problem that is indicated by the lack of output from this command?

- Include the **default-information originate** command.
- Include the **no auto-summary** command.
- Specify the network for which RIP routing has to be enabled.
- Implement RIPv2 authentication in the network.

49

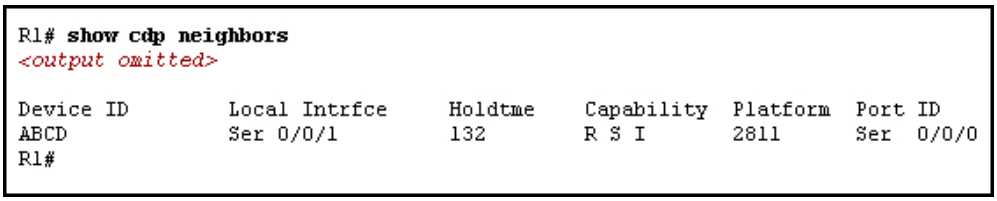


Refer to the exhibit. Router R2 is configured properly and all interfaces are functional. Router R1 has been installed recently. Host A is unable to ping host B.

Which procedure can resolve this problem?

- Configure a static route on R1 using the IP address of the serial interface on R1.
- Configure a default route on R1 with the exit interface Fa0/0 on R1.
- Configure a static route on R1 using the IP address of S0/0/0 on R2.
- Configure a default route on R1 using the IP address of Fa0/0 on R2.

50



Refer to the exhibit. The **show cdp neighbors** command was run at R1. Which two facts about the newly detected device can be determined from the output? (Choose two.)

- [x] ABCD is a router that is connected to R1.
- [ ] ABCD is a non-CISCO device that is connected to R1.

- [x] The device is connected at the Serial0/0/1 interface of R1.
- [ ] R1 is connected at the S0/0/1 interface of device ABCD.
- [ ] ABCD does not support switching capability.

51

```
R2#show ip rip database
192.168.3.0/24    directly connected, FastEthernet0/0
192.168.4.0/24    directly connected, Serial0/0/1
192.168.5.0/24
    [1] via 192.168.4.1, Serial0/0/1
192.168.6.0/24
    [1] via 192.168.4.1, Serial0/0/1
192.168.7.0/24
    [1] via 192.168.4.1, Serial0/0/1
192.168.8.0/24
    [2] via 192.168.4.1, Serial0/0/1
R2#show ip route
<output omitted>
Gateway of last resort is not set
D    192.168.1.0/24 [90/2172416] via 192.168.2.1, 00:00:24, Serial0/0/0
C    192.168.2.0/24 is directly connected, Serial0/0/0
C    192.168.3.0/24 is directly connected, FastEthernet0/0
C    192.168.4.0/24 is directly connected, Serial0/0/1
R    192.168.5.0/24 [120/1] via 192.168.4.1, 00:00:08, Serial0/0/1
D    192.168.6.0/24 [90/2172416] via 192.168.2.1, 00:00:24, Serial0/0/0
R    192.168.7.0/24 [120/1] via 192.168.4.1, 00:00:08, Serial0/0/1
R    192.168.8.0/24 [120/2] via 192.168.4.1, 00:00:08, Serial0/0/1
```

Refer to the exhibit. A router learns a route to the 192.168.6.0 network, as shown in the output of the **show ip rip database** command. However, upon running the **show ip route** command, the network administrator sees that the router has installed a different route to the 192.168.6.0 network learned via EIGRP. What could be the reason for the missing RIP route?

- (•) Compared to RIP, EIGRP has a lower administrative distance.
- ( ) Compared to EIGRP, RIP has a higher metric value for the route.
- ( ) Compared to RIP, the EIGRP route has fewer hops.
- ( ) Compared to RIP, EIGRP has a faster update timer.

52 All routers in a network are configured in a single OSPF area with the same priority value. No loopback interface has been set on any of the routers. Which secondary value will the routers use to determine the router ID?

- ( ) The highest MAC address among the active interfaces of the network will be used.
- ( ) There will be no router ID until a loopback interface is configured.
- ( ) The highest IP address among the active FastEthernet interfaces that are running OSPF will be used.
- (•) The highest IP address among the active interfaces will be used.

53

```
R2# show ip eigrp topology
IP-EIGRP Topology Table for AS(80)/ID(192.168.101.1)

Codes: P - Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - reply Status, s - sia Status

P 192.168.1.0/30, 1 successors, FD is 128256
       Via Connected, Serial0/0/0
R2#


R1# show ip eigrp topology
IP-EIGRP Topology Table for AS(50)/ID(192.168.100.5)

Codes: P -
Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - reply Status, s - sia Status

P 192.168.1.0/30, 1 successors, FD is 20512000
        via Connected, Serial0/0/0
```

Refer to the exhibit. Routers R1 and R2 are directly connected via their serial interfaces and are both running the EIGRP routing protocol. R1 and R2 can ping the directly connected serial interface of their neighbor, but they cannot form an EIGRP neighbor adjacency.

What action should be taken to solve this problem?

- ( ) Enable the serial interfaces of both routers.
- ( ) Configure EIGRP to send periodic updates.
- ( ) Configure the same hello interval between the routers.

- Configure both routers with the same EIGRP process ID.

54

```
R1# show ip ospf interface serial 0/0/0
Serial0/0/0 is up, line protocol is up
  Internet Address 192.168.10.1/30, Area 0
  Process ID 1, Router ID 10.1.1.1, Network Type POINT_TO_POINT, Cost: 64
  Transmit Delay is 1 sec, State POINT TO POINT,
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
    oob-resync timeout 40
    Hello due in 00:00:07
<output omitted>

R2# show ip ospf interface serial 0/0/0
Serial0/0/0 is up, line protocol is up
  Internet Address 192.168.10.2/30, Area 0
  Process ID 2, Router ID 10.2.2.2, Network Type POINT_TO_POINT, Cost: 64
  Transmit Delay is 1 sec, State POINT TO POINT,
  Timer intervals configured, Hello 20, Dead 50, Wait 40, Retransmit 5
    oob-resync timeout 40
    Hello due in 00:00:07
<output omitted>
```

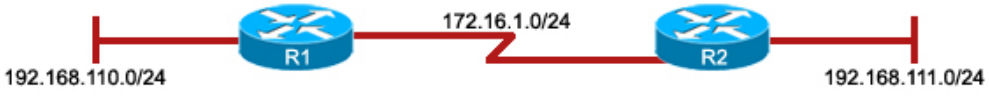
Refer to the exhibit. Two routers are unable to establish an adjacency. What is the possible cause for this?

- The two routers are connected on a multiaccess network.
- The hello and dead intervals are different on the two routers.
- They have different OSPF router IDs.
- They have different process IDs.

55 What is the function of the OSPF LSR packet?

- It is used to confirm the receipt of LSUs.
- It is used to establish and maintain adjacency with other OSPF routers.
- It is used by the receiving routers to request more information about any entry in the DBD.
- It is used to check the database synchronization between routers.

56




```
R1# show ip protocol

Routing Protocol is "ospf 50"
  <output omitted>

  Routing for Networks:
    192.168.110.0 0.0.0.255 area 0
    172.16.1.0 0.0.0.255 area 0
<output omitted>

R2# show ip protocol

Routing Protocol is "ospf 50"
  <output omitted>

  Maximum path: 4
  Routing for Networks:
    192.168.111.0 0.0.0.255 area 1
    172.16.1.0 0.0.0.255 area 1
<output omitted>
```

Refer to the exhibit. The hosts that are connected to R2 are unable to ping the hosts that are connected to R1. How can this problem be resolved?

- Configure the router ID on both routers.
- Configure the R2 router interfaces for area 0.
- Configure a loopback interface on both routers.
- Configure the proper subnet masks on the router interfaces.

57 Which two statements are true for link-state routing protocols? (Choose two.)

- ☐ Routers that run a link-state protocol can establish a complete topology of the network.

- [ ] Routers in a multipoint network that run a link-state protocol can exchange routing tables.
- [ ] Routers use only hop count for routing decisions.
- [x] The shortest path first algorithm is used.
- [ ] Split horizon is used to avoid routing loops.

100% correct Reset View

Showing 1 of 1 Prev Page: 1 Next

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