CHAPTER – 7   RIPv2

```
Router1(config)# router rip
Router1(config-router)# version 2
Router1(config-router)# network 192.160.0.0
```

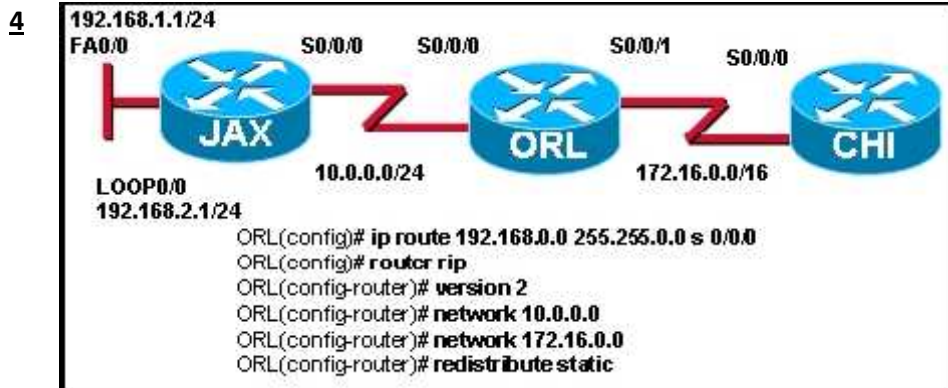**Refer to the exhibit. What effect will the commands that are shown have on RIP updates for Router1?**

○   Only version 2 updates are sent to 255.255.255.255.

◉   Only version 2 updates are sent to 224.0.0.9.

○   Both version 1 and version 2 updates are sent to 224.0.0.9.

○   Both version 1 and version 2 updates are sent to 255.255.255.255.

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2   **A network administrator has been told that the company IP address infrastructure must adhere to RFC 1918. What three IP address ranges from RFC 1918 (Private IP Addresses) could the administrator use on the network? (Choose three.)**

☑   10.0.0.0/8

☐   127.0.0.0/8

☐   169.254.0.0/16

☑   172.16.0.0/12

☑   192.168.0.0/16

☐   209.165.201.0/27

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3   **What field was added to the RIP message by RFC 1723 to add support for VLSM and CIDR?**

◉   subnet mask

○   destination port number

○   address family identifier

○   source and destination IP addresses

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```
ORL(config)# ip route 192.168.0.0 255.255.0.0 s 0/0/0
ORL(config)# router rip
ORL(config-router)# version 2
ORL(config-router)# network 10.0.0.0
ORL(config-router)# network 172.16.0.0
ORL(config-router)# redistribute static
```
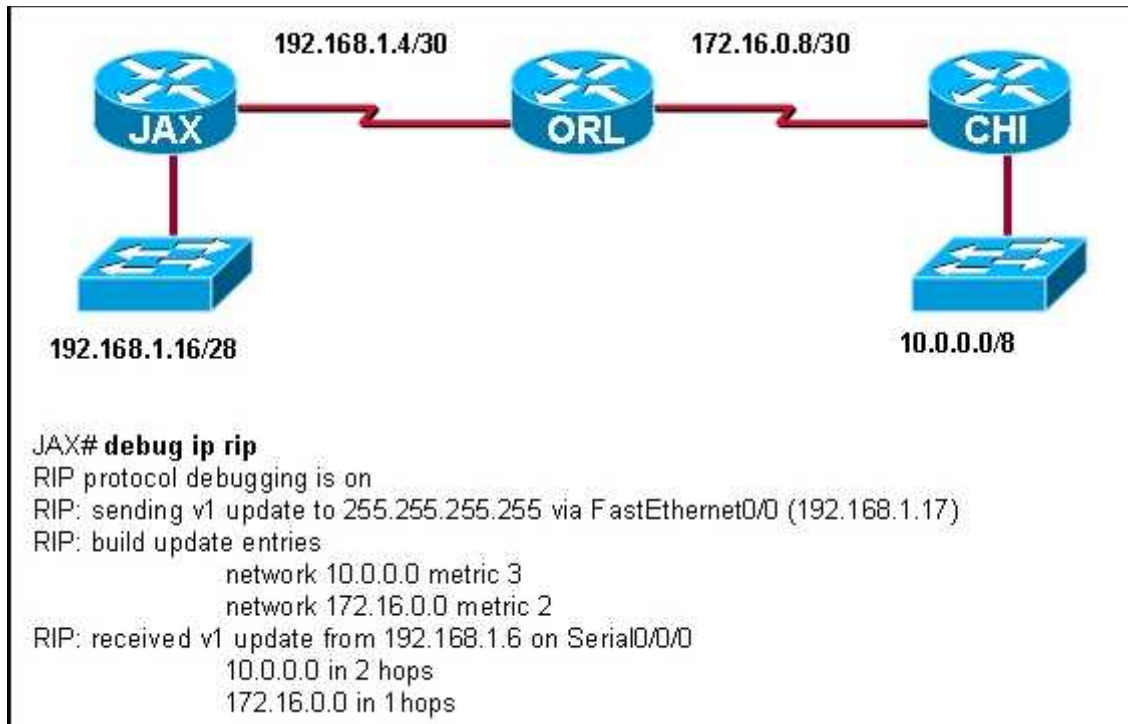
Refer to the exhibit. All routers are running RIP version 2. JAX is configured to just advertise the 10.0.0.0/24 network. CHI is configured to advertise the 172.16.0.0/16 network. A network administrator enters the commands shown in the exhibit. What changes will occur in this network?

○   The JAX router will ignore updates for the 172.16.0.0/16 network due to split horizon issues.

◉   The CHI router will install a route to the 192.168.0.0/16 network in its routing table.

○   The routing table for CHI will have the 192.168.0.0/16 route but it will have an S next to the route.

○   The ORL router will apply a 255.255.0.0 subnet mask to all networks in the routing updates it forwards.

5 **What are two functions of the network command used when configuring routing protocols? (Choose two.)**

☑ identifies which networks will be included in the routing updates

☐ identifies the hosts addresses that can be summarized in the network

☐ used to list all addresses for remote and local networks

☐ determines which subnet mask to apply to routing updates

☑ determines which interfaces can send and receive routing updates

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```
JAX# debug ip rip
RIP protocol debugging is on
RIP: sending v1 update to 255.255.255.255 via FastEthernet0/0 (192.168.1.17)
RIP: build update entries
            network 10.0.0.0 metric 3
            network 172.16.0.0 metric 2
RIP: received v1 update from 192.168.1.6 on Serial0/0/0
            10.0.0.0 in 2 hops
            172.16.0.0 in 1 hops
```

Refer to the exhibit. The exhibited network contains a mixture of Cisco and non-Cisco routers. The command debug ip rip was entered on the JAX router. All routers are running the same version of RIP. Router CHI and Router ORL are not able to reach the 192.168.1.16/28 network. What is a possible solution to this problem?

○ Enable split horizon in the network.

◉ Configure RIPv2 on routers.

○ Add network 192.168.1.0 to the RIP configuration on the JAX router.

○ Configure JAX Fa0/0 as a passive interface.

○ Enable the Serial0/0/0 interface on the JAX router.

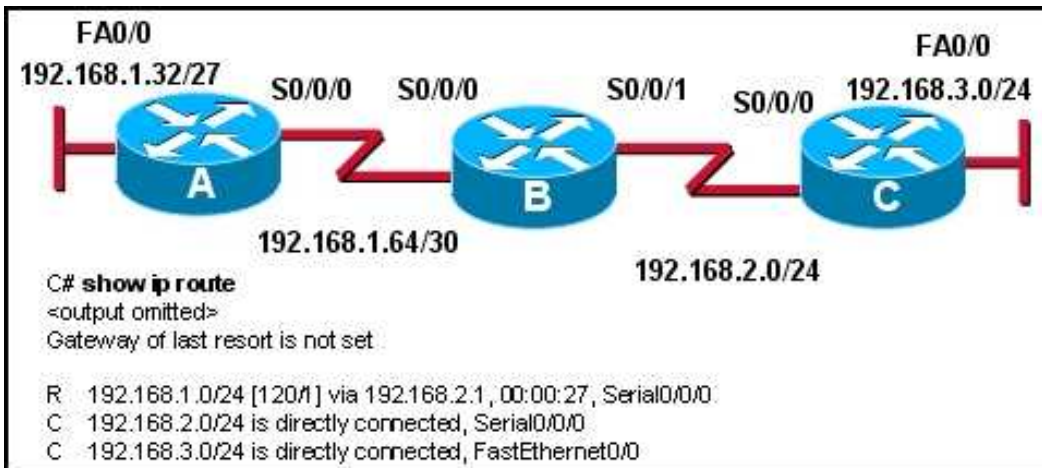○ Change the IP address on the Fa0/0 interface of the JAX router to 192.168.1.1/24.

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7 **How are RIP v1 and RIP v2 similar to one another? (Choose three.)**

☑ They both use hop count as a metric.

☑ They both have the same metric value for infinite distance.

☐ They both use a broadcast IP address to send updates to their neighbors.

☐ They both send subnet mask information in their updates.

☐ They both provide for authentication of update sources.

☑ They both use split horizon to prevent routing loops.

8 **What is the maximum network diameter permitted by the default metric of RIPv2?**

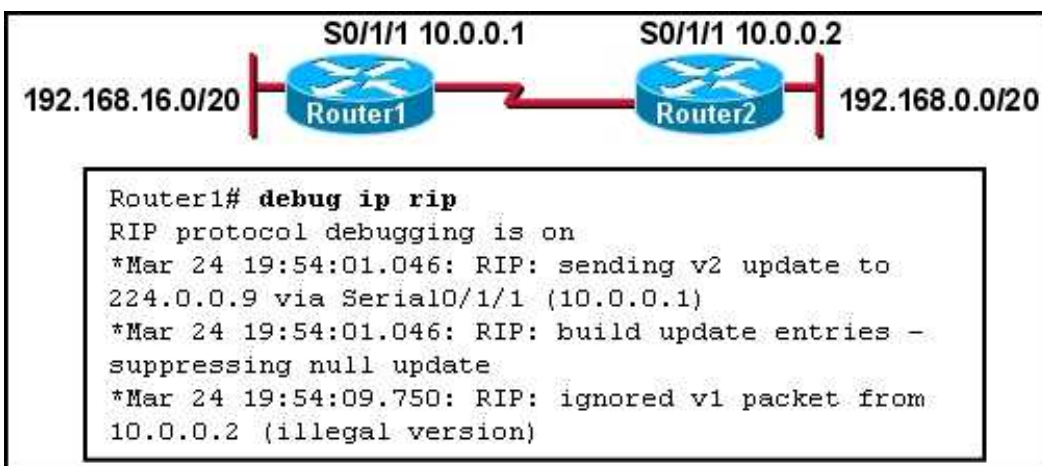- ⦿ 15 hops
- ○ 16 hops
- ○ 100 hops
- ○ 120 hops
- ○ 255 hops

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```
FA0/0
192.168.1.32/27    S0/0/0    S0/0/0        S0/0/1   S0/0/0   FA0/0
                                                             192.168.3.0/24
        A              B                      C
            192.168.1.64/30
                              192.168.2.0/24

C# 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, 00:00:27, 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
```

Refer to the exhibit. If all routers are running RIP version 2, why is there no route for the 192.168.1.32/27 network?

- ○ Rip version 2 does not send subnet masks in its updates.
- ○ Router A is not setup with RIP as a routing protocol.
- ⦿ Rip version 2 will auto summarize routes by default.
- ○ Router B is not setup to advertise the 192.168.1.64/30 network.

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```
        S0/1/1 10.0.0.1          S0/1/1 10.0.0.2
192.168.16.0/20                                192.168.0.0/20
            Router1                Router2

Router1# debug ip rip
RIP protocol debugging is on
*Mar 24 19:54:01.046: RIP: sending v2 update to
224.0.0.9 via Serial0/1/1 (10.0.0.1)
*Mar 24 19:54:01.046: RIP: build update entries -
suppressing null update
*Mar 24 19:54:09.750: RIP: ignored v1 packet from
10.0.0.2 (illegal version)
```
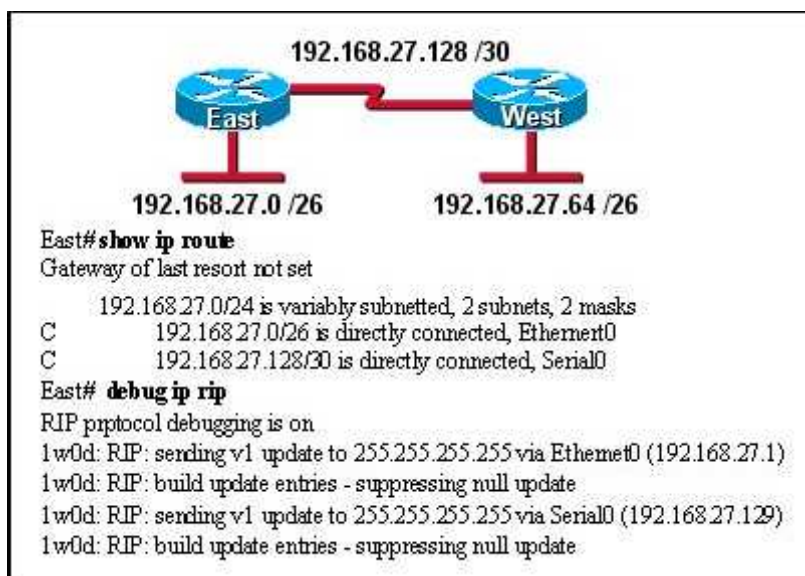
Refer to the exhibit. Which command on which router will allow Router1 to learn about the 192.168.0.0/20 network?

- ○ Router1(config)# ip classless
- ○ Router1(config-router)# no passive-interface serial 0/1/1
- ⦿ Router2(config-router)# version 2
- ○ Router2(config-router)# neighbor 10.0.0.2

192.168.27.128 /30

192.168.27.0 /26   192.168.27.64 /26

```
East#show ip route
Gateway of last resort not set

      192.168.27.0/24 is variably subnetted, 2 subnets, 2 masks
C          192.168.27.0/26 is directly connected, Ethernet0
C          192.168.27.128/30 is directly connected, Serial0
East# debug ip rip
RIP prptocol debugging is on
1w0d: RIP: sending v1 update to 255.255.255.255 via Ethernet0 (192.168.27.1)
1w0d: RIP: build update entries - suppressing null update
1w0d: RIP: sending v1 update to 255.255.255.255 via Serial0 (192.168.27.129)
1w0d: RIP: build update entries - suppressing null update
```
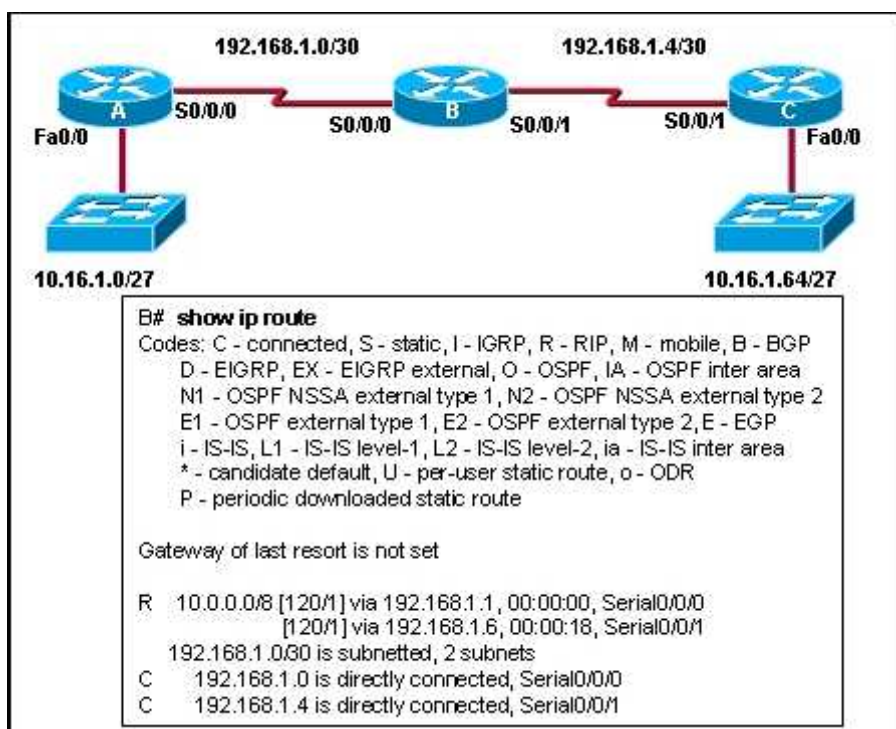
Refer to the exhibit. Routers East and West are configured using RIPv1. Both routers are sending updates about their directly connected routes. The East router can ping the West router serial interface and West can ping the serial interface of East. However, neither router has dynamically learned routes from the other. What is most likely the problem?

○ A gateway of last resort is required.

○ Subnetting is not supported by RIPv1.

◉ VLSM is not supported by RIPv1.

○ One of the routers needs a clock rate on the serial interface.

192.168.1.0/30   192.168.1.4/30

A   S0/0/0   S0/0/0   B   S0/0/1   S0/0/1   C
Fa0/0   Fa0/0

10.16.1.0/27   10.16.1.64/27

```
B# 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
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - 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

R   10.0.0.0/8 [120/1] via 192.168.1.1, 00:00:00, Serial0/0/0
               [120/1] via 192.168.1.6, 00:00:18, Serial0/0/1
    192.168.1.0/30 is subnetted, 2 subnets
C      192.168.1.0 is directly connected, Serial0/0/0
C      192.168.1.4 is directly connected, Serial0/0/1
```

Refer to the exhibit. All routers are running RIPv1. What changes will occur in the routing table of router B if a loopback interface with an address of 10.16.1.129/27 is configured on router B?

○ Routes to the 10.16.1.0/27, 10.16.1.64/27, and 10.16.1.128/27 networks are added.

◉ A connected route to the 10.16.1.128/27 network is added.

○ A third route to the 10.0.0.0/8 network with RIPv1 as the source is added.

○ The 10.0.0.0/8 route is dropped immediately from the routing table after router B is configured.

13 **A network administrator installed four new routers that are running RIPv2. Router1 is a boundary router in the RIPv2 network and has a default route configured. Once the network has converged, the network administrator enters Router1(config-router)# default-information originate on Router1. How will this affect the network?**

   ○ prevents Router1 from forwarding updates about networks that are not directly connected

   ○ causes all routers in the network to synchronize routing updates with Router1

   ○ forces Router1 to become the primary or designated router (DR) for updates

   ◉ propagates the default route to all routers in the network

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```
R2#show ip protocols
Routing Protocol is "rip"
  Sending updates every 30 seconds, next due in 1 seconds
  Invalid after 180 seconds, hold down 180, flushed after 240
  Outgoing update filter list for all interfaces is
  Incoming update filter list for all interfaces is
  Redistributing: static, rip
  Default version control: send version 2, receive version 2
    Interface          Send  Recv  Triggered RIP  Key-chain
    Serial0/0/0         2     2
    Serial0/0/1         2     2
  Automatic network summarization is in effect
  Routing for Networks:
    10.0.0.0
    209.165.200.0
  Passive Interface(s):
    FastEthernet0/0
  Routing Information Sources:
    Gateway         Distance      Last Update
    209.165.200.234    120        00:00:03
    209.165.200.230    120        00:00:17
  Distance: (default is 120)
```

Refer to the exhibit. What can be concluded from the output shown in the exhibit?
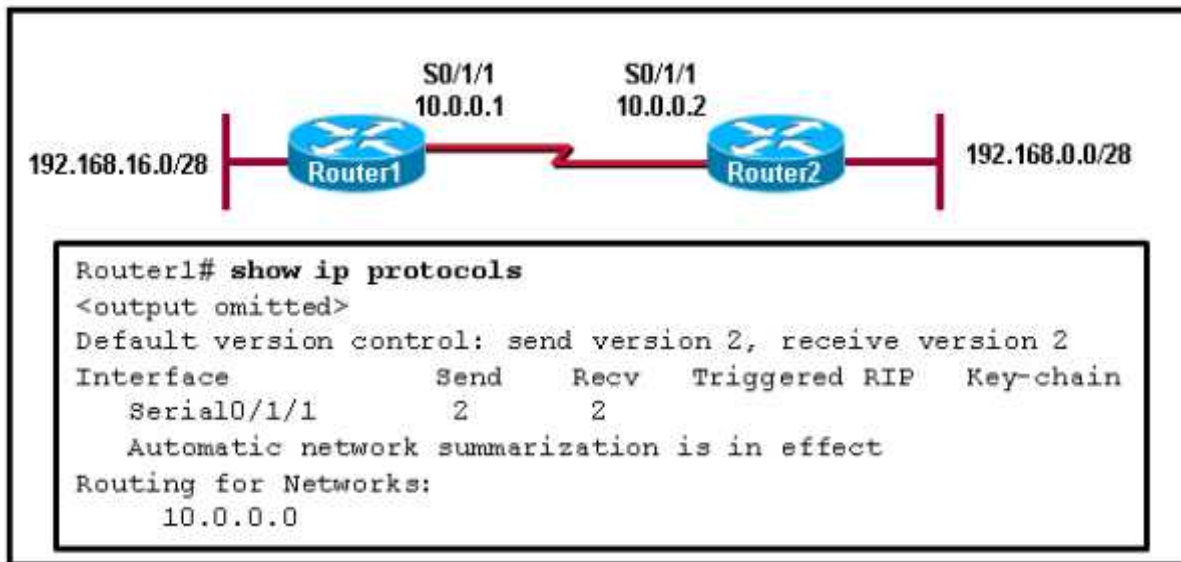
   ○ The routing table is limited to 2 routes.

   ○ The LAN interfaces are participating in the routing process.

   ○ One update has been sent out of each serial interface and 2 have been received.

   ◉ The **no auto-summary** has not been configured on this router.

16 **What are two reasons to implement RIP version 2 rather than RIP version 1? (Choose two.)**

   ☑ RIP version 2 supports VLSM.

   ☐ RIP version 2 supports more than 16 routers.

   ☐ RIP version 2 supports classful (and not classless) routing

   ☑ RIP version 2 supports routing update authentication.

   ☐ RIP version 2 supports multi-areas.

   ☐ RIP version 2 uses the Dijkstra algorithm rather than the Bellman-Ford algorithm.

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```
                    S0/1/1            S0/1/1
                    10.0.0.1         10.0.0.2
192.168.16.0/28 ───[Router1]────────────────[Router2]─── 192.168.0.0/28
```

```
Router1# show ip protocols
<output omitted>
Default version control: send version 2, receive version 2
Interface            Send    Recv    Triggered RIP    Key-chain
    Serial0/1/1       2       2
    Automatic network summarization is in effect
Routing for Networks:
        10.0.0.0
```

Refer to the exhibit. Which command will allow Router2 to learn about the 192.168.16.0/28 network?

- ○ Router1(config)# ip classless
- ◉ Router1(config-router)# network 192.168.16.0
- ○ Router1(config-router)# no passive-interface serial 0/1/1
- ○ Router2(config-router)# version 2
- ○ Router2(config-router)# neighbor 10.0.0.2

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```
Sanford# show ip route

<output omitted>

Gateway of last resort is not set
    192.168.6.0/24 is variably subnetted, 6 subnets, 2 masks
C       192.168.6.72/30 is directly connected, Serial0/1/0
C       192.168.6.68/30 is directly connected, Serial0/0/0
C       192.168.6.64/30 is directly connected, Loopback0
C       192.168.6.32/27 is directly connected, FastEthernet0/1
R       192.168.6.96/27 [120/2] via 192.168.6.6, 00:08:53, FastEthernet0/0
C       192.168.6.4/30 is directly connected, FastEthernet0/0
```

Refer to the exhibit. A technician needs to add a new loopback interface to test routing functionality and network design. The technician enters the following set of commands on the router:

    Sanford(config)# interface loopback1
   Sanford(config-if)# ip address 192.168.6.62 255.255.255.252

Why does the router respond with an error?

- ○ The router does not allow loopback interface configurations.
- ○ This mask can not be used with this class of addresses.
- ○ Classless routing must be configured before this address can be added.
- ◉ The network address for Loopback1 overlaps with an already configured interface address.
- ○ The router is over the limit for the maximum paths that can be provided in the routing table.

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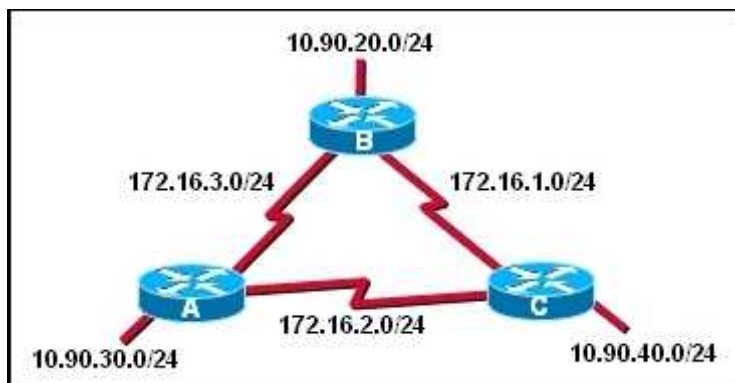
Refer to the exhibit. RIPv1 is configured as the routing protocol for the network that is shown. The following commands are used on each router:

    router rip
    network 10.0.0.0
    network 172.16.0.0

When this configuration is complete, users on the LAN of each router are unable to access the remote LANs. Why?

- The network statements are configured incorrectly.
- A routing loop has been created.
- RIPv1 is unable to route to discontiguous subnets of a major network.
- RIPv1 is unable to route networks with a /24 subnet mask.