All the listed **Qs** could be **found** in **BOTH** lab files: **Manual** and **Slides (in yellow)**

Questions

- **Take a screenshot** of `R2(config-router)#network 172.16.0.0`

```
R2(config-router)#network 172.16.0.0
R2(config-router)#
%DUAL-5-NBRCHANGE: IP-EIGRP 1: Neighbor 172.16.3.1 (Serial0/0/0) is up:
new adjacency
```

- What is the IP address of the EIGRP neighbor router? 172.16.3.1
- What interface on the R2 router is the neighbor adjacent to? Serial0/0/0

Questions

- Examine the Successors and Feasible distances in the routing table on R2 (**Take a screenshot**) **using show ip route command**

```
     172.16.0.0/16 is variably subnetted, 4 subnets, 3 masks
D       172.16.0.0/16 is a summary, 00:09:43, Null0
D       172.16.1.0/24 [90/40514560] via 172.16.3.1, 00:11:19, Serial0/0/0
C       172.16.2.0/24 is directly connected, FastEthernet0/0
C       172.16.3.0/30 is directly connected, Serial0/0/0
D    192.168.1.0/24 [90/3014400] via 192.168.10.10, 00:09:41, Serial0/0/1
     192.168.10.0/24 is variably subnetted, 3 subnets, 2 masks
D       192.168.10.0/24 is a summary, 00:09:43, Null0
D       192.168.10.4/30 [90/3523840] via 192.168.10.10, 00:09:41, Serial0/0/1
C       192.168.10.8/30 is directly connected, Serial0/0/1

R2#
```

0.15

Questions

- What is the best path to PC1?
  - D 172.16.1.0/24 [90/40514560] via 172.16.3.1, 00:11:19, Serial0/0/0
- What is the IP address and name of the successor router in this route?(The IP address of a successor is shown in a routing table entry right after the word “via”)
  - R1 IP address 172.16.3.1
- What is the feasible distance to the network that PC1 is on? (FD is the metric listed in the routing table entry as the second number inside the brackets)
  - 40514560

Questions

- For the route from **R2** to the **192.168.1.0** Network
- Examine the routing table on R1

```
     172.16.0.0/16 is variably subnetted, 4 subnets, 3
masks
D       172.16.0.0/16 is a summary, 01:14:37, Null0
C       172.16.1.0/24 is directly connected,
FastEthernet0/0
D       172.16.2.0/24 [90/40514560] via 172.16.3.2,
00:26:26, Serial0/0/0
C       172.16.3.0/30 is directly connected, Serial0/0/0
D    192.168.1.0/24 [90/2172416] via 192.168.10.6,
00:57:41, Serial0/0/1
     192.168.10.0/24 is variably subnetted, 3 subnets, 2
masks
D       192.168.10.0/24 is a summary, 01:14:37, Null0
C       192.168.10.4/30 is directly connected,
Serial0/0/1
D       192.168.10.8/30 [90/3523840] via 192.168.10.6,
00:21:28, Serial0/0/1
```

0.15

0.15

- What is the reported distance to the **192.168.1.0** network? 2172416

Questions

- Examine the routing table on R2 using the **show ip route** command

```
D       172.16.0.0/16 is a summary, 00:28:45, Null0
D       172.16.1.0/24 [90/40514560] via 172.16.3.1,
00:30:21, Serial0/0/0
C       172.16.2.0/24 is directly connected,
FastEthernet0/0
C       172.16.3.0/30 is directly connected, Serial0/0/0
D    192.168.1.0/24 [90/3014400] via 192.168.10.10,
00:28:43, Serial0/0/1
     192.168.10.0/24 is variably subnetted, 3 subnets, 2
masks
D       192.168.10.0/24 is a summary, 00:28:45, Null0
D       192.168.10.4/30 [90/3523840] via 192.168.10.10,
00:28:43, Serial0/0/1
C       192.168.10.8/30 is directly connected,
Serial0/0/1
```

0.15

- What is the feasible distance to the 192.168.1.0 network? 3014400 0.15
- Would R2 consider R1 to be a feasible successor to the 192.168.1.0 network? Yes 0.15

Questions

- Use the **show ip eigrp topology network-address** command to view detail EIGRP topology information for the **192.16.1.0** network on R2

```
R2#show ip eigrp topology 192.168.1.0
IP-EIGRP (AS 1): Topology entry for 192.168.1.0/24
  State is Passive, Query origin flag is 1, 1 Successor(s), FD is 3014400
  Routing Descriptor Blocks:
  192.168.10.10 (Serial0/0/1), from 192.168.10.10, Send flag is 0x0
      Composite metric is (3014400/28160), Route is Internal
      Vector metric:
        Minimum bandwidth is 1024 Kbit
        Total delay is 20100 microseconds
        Reliability is 255/255
        Load is 1/255
        Minimum MTU is 1500
        Hop count is 1
  172.16.3.1 (Serial0/0/0), from 172.16.3.1, Send flag is 0x0
      Composite metric is (41026560/2172416), Route is Internal
      Vector metric:
        Minimum bandwidth is 64 Kbit
        Total delay is 40100 microseconds
        Reliability is 255/255
        Load is 1/255
        Minimum MTU is 1500
        Hop count is 2
R2#
```

- How many successors are there for this network? One
- What is the feasible distance to this network? 3014400

Questions

- What is the IP address of the feasible successor? 172.16.3.1
- What is the reported distance (AD) for 192.168.1.0 from the feasible successor? 2172416
- What would be the feasible distance to 192.168.1.0 if R1 became the successor? 41026560

Questions

- Examine the **routing table** of the **R3** router using **show ip eigrp topology** (**Take a Screenshot**)
- Why is the R1 router (192.168.10.5) the only successor for the route to the 172.16.0.0/16 network?
  - R1 router has a better metric or higher bandwidth

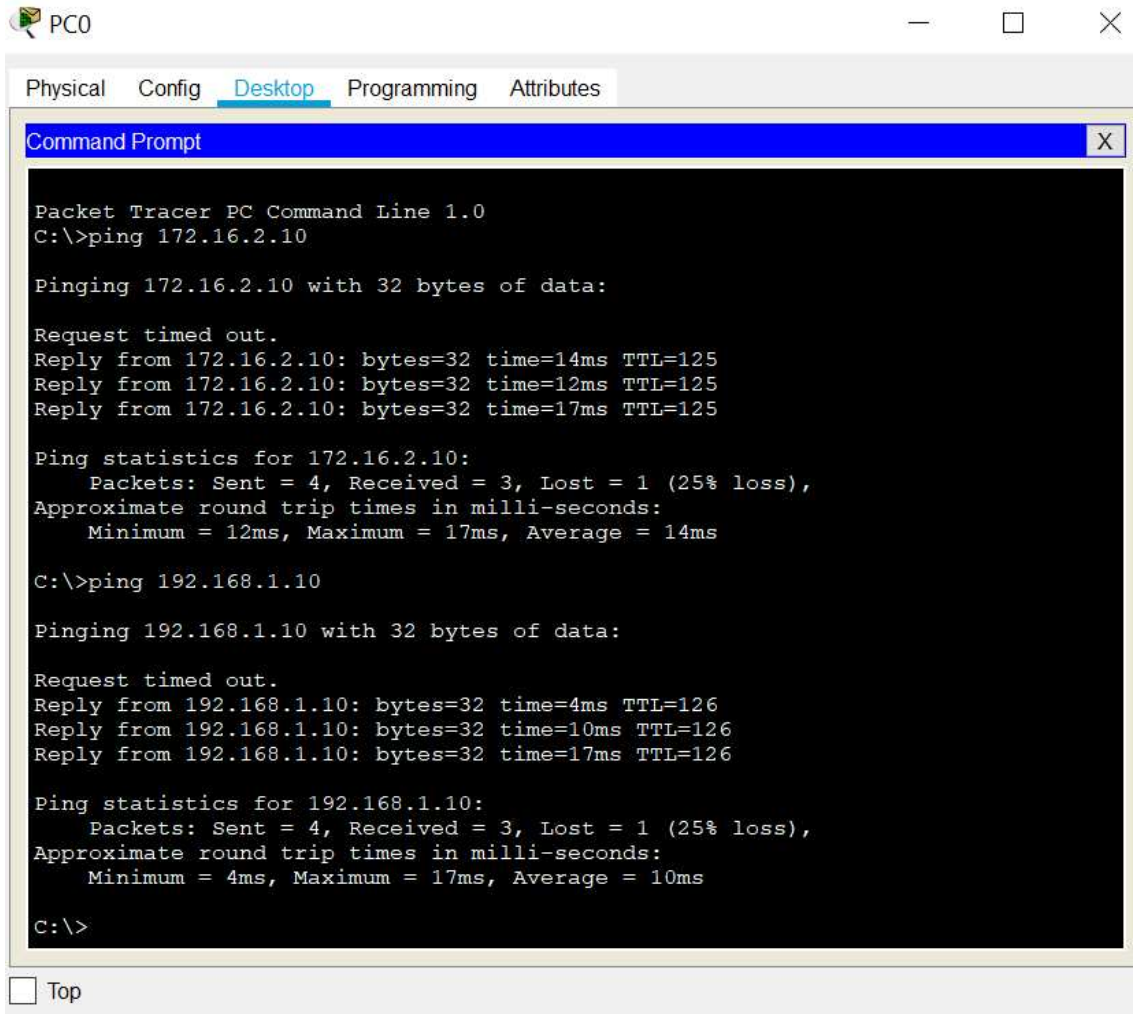
```
D       172.16.0.0/16 [90/2172416] via 192.168.10.5,
01:23:01, Serial0/0/0
C    192.168.1.0/24 is directly connected,
FastEthernet0/0
     192.168.10.0/24 is variably subnetted, 3 subnets, 2
masks
D       192.168.10.0/24 is a summary, 01:23:01, Null0
C       192.168.10.4/30 is directly connected,
Serial0/0/0
C       192.168.10.8/30 is directly connected,
Serial0/0/1

R3#
```

Questions

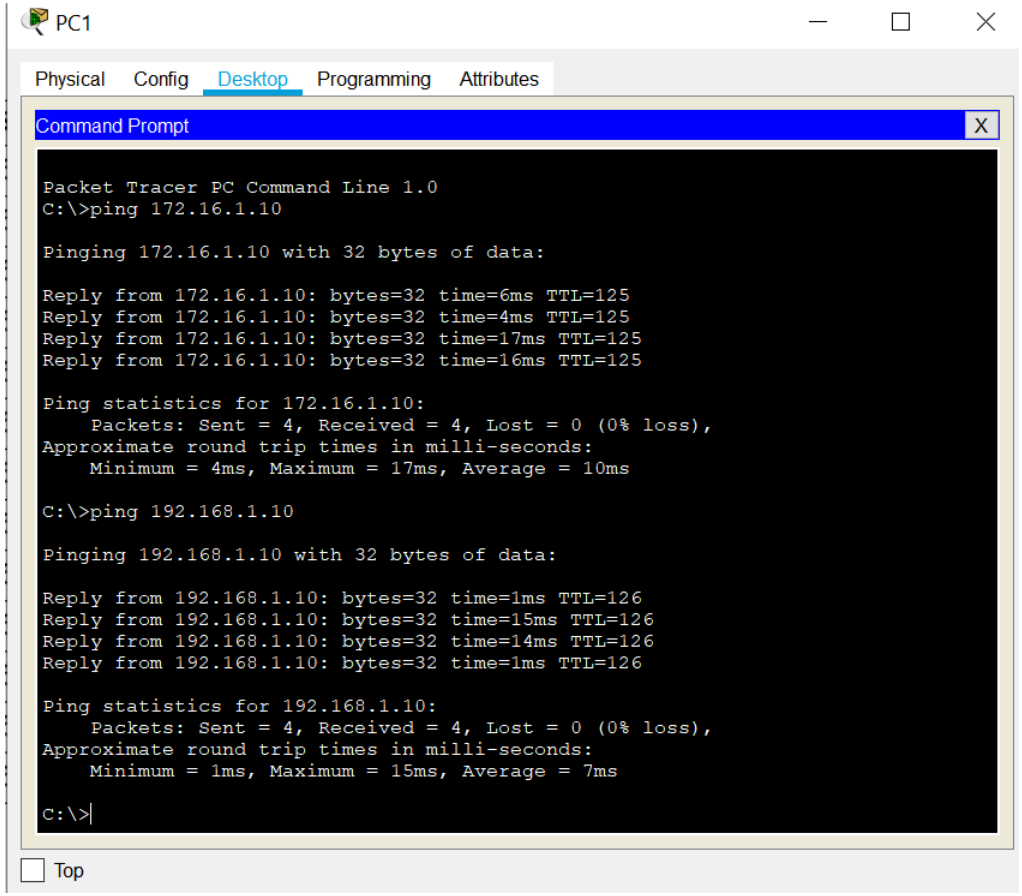
- From **each PC**, **ping the other PCs' IP addresses** and **take screenshot**
  - You **should be able to ping other pcs** in different subnets
  - **One loss** out of 4 is **OK**, but **more than that** means you have **connectivity or configurations issues**

From PC0 ping PC1 and PC2



2

From PC1 ping PC0 and PC2



2

From PC2 ping PC0 and PC1