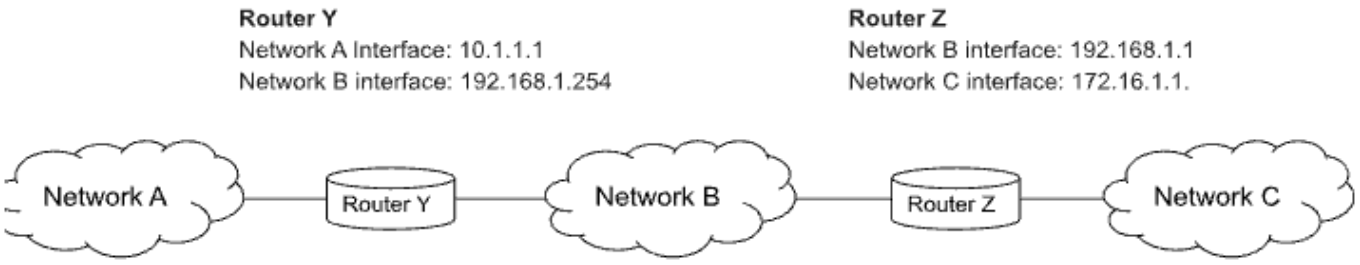
Use the following scenario to answer the 10 questions below:

You have 3 networks (A, B, and C) and 2 routers (Y and Z).

Network A has an address space of 10.1.1.0/24 and is connected to router Y, using the interface 10.1.1.1.

Network B has an address space of 192.168.1.0/24 and is connected to Router Y, using the interface 192.168.1.254. Network B is also connected with router Z, using the interface of 192.168.1.1.

Network C has an address space of 172.16.1.0/24 and is connected to router Z, using the interface 172.16.1.1. The diagram below represents these connections and interfaces.



1. Computer 1 on network B, with IP address of 192.168.1.233, wants to send a packet to Computer 2, with IP address of 10.1.1.205. On which network is computer 2? **1 / 1 point**

- ○ Not present
- ◉ Network A
- ○ Network C
- ○ Network B

✓ **Correct**

2. For what purpose would computer 1 send a FF:FF:FF:FF:FF broadcast ARP message to all nodes on network A? **1 / 1 point**

- ○ To verify the internet connection
- ◉ To obtain Router Y's MAC address
- ○ To obtain Computer 2 MAC address
- ○ To calculate the TTL

✓ **Correct**

3. Which layer constructs the Ethernet frame? **1 / 1 point**

- ○ Transport layer
- ◉ Data link layer
- ○ Application layer
- ○ Physical Layer

✓ **Correct**

4. What information is in the data payload of the Ethernet frame? **1 / 1 point**

- ○ network interface
- ○ ART message
- ◉ IP datagram
- ○ Handshake

✓ **Correct**

5. When constructing the Ethernet datagram to send the packet from Router Y to Router Z, what information needs to be in the destination MAC address? **1 / 1 point**

- [x] Router Z's MAC address
- [ ] Computer 1's MAC address
- [ ] Computer 2's MAC address
- [ ] Router Y's MAC address

Correct
Please refer back to the "Dissecting an Ethernet Frame" video for a refresher.

6. Computer 1 on Network A sends a packet to Computer 2 on Network C. What's the first step that Router Z does after receiving the Ethernet frame? **1 / 1 point**

- [ ] Increases the TTL by one
- [ ] Sends an ARP broadcast message
- [ ] Checks the destination IP address and changes it to its own
- [x] Calculates a checksum and compares this checksum with the one in the Ethernet frame header

Correct

7. Computer 1 on network A, with IP address of 10.1.1.10, wants to send a packet to Computer 2, with IP address of 192.168.1.14. If the TTL value was set to 64 at the beginning, what is the value of the TTL once it reaches its destination? **1 / 1 point**

- [ ] 61
- [ ] 65
- [ ] 0
- [x] 63

Correct

8. Computer 1 on network C, with IP address of 172.16.1.57, wants to send a packet to Computer 2, with IP address of 192.168.1.14. Taking in consideration that computer 1 is sending a request to a web server on computer 2, listening on port 80, and the source port on computer 1 is 5000, which of the following contains the correct information for the fourth TCP segment of data? **1 / 1 point**

- (●) Source Port: 5000

  Destination Port: 80

  Sequence Number: 4

  Acknowledgment Number: 5

- ( ) Source Port: 8081

  Destination Port: 50

  Sequence Number: 4

  Acknowledgment Number: 1

- ( ) Source Port: 80

  Destination Port: 5000

  Sequence Number: 1

  Acknowledgment Number: 1

- ( ) Source Port: 5000

  Destination Port: 80

  Sequence Number: 1

  Acknowledgment Number: 2

✓ **Correct**

9. Computer 1 on network B, with IP address of 192.168.1.121, wants to send a packet to Computer 2, with IP address of 172.16.1.57. Which of the following has the correct IP datagram information for the fields: Version, minimum Header Length, Source IP, and Destination IP? **1 / 1 point**

- Version: 5

  Header Length: 16

  Source IP Address: 10.1.1.0/24.

  Destination IP address: 10.1.1.0/23.

- Version: 6

  Header Length: 20

  Source IP Address: 8a:1a:2b:3c:4d:5f

  Destination IP address: 2a:2b:3c:4d:8f

- Version: 4

  Header Length: 32

  Source IP Address: 10.1.1.1

  Destination IP address: 172.16.1.1

- (selected) Version: 4

  Header Length: 20

  Source IP Address: 192.168.1.121

  Destination IP address: 172.16.1.57

✓ **Correct**

10. When referring to RJ45, we are referring to _____. **0 / 1 point**

- (selected) ethernet port
- network identification
- router velocity
- cable plug

✗ **Incorrect**

Please refer back to the “Network Ports and Patch Panels” video for a refresher.