

**Part 1:**

1. f6:7d:85:15:0d:8c, 92:04:94:05:5e:05, ea:74:22:37:40:16
2. Yes they are unique.
3. They have to be unique because they are used to identify different nodes in the network, so two nodes can't have the same address.
4. They come from the manufacturer of the device.

**Part 2:**

1. 92:04:94:05:5e:05
2. eth0
3. To know it's position in the network, e.g. which port each device is connected to.
4. IP Address: 10.10.10.2, HWtype: ether, Flags Mask: C

**Part 3:**

1. There's 2 types, broadcast and reply(unicast).
2. MAC and IP address for sender and target.
3. Source and target MAC addresses are 48 bits each, and both IP addresses are 32 bits each.
4. The target MAC address in the broadcast message is all 0's because it doesn't know the MAC address of the target yet, only the IP address.
5. It uses the IP address to identify the target.

**Part 4:**

1. The sender broadcasts an arp message to the network. The message contains the IP address it wants. The device with that IP address responds with a unicast message, which contains it's MAC address.

**Part 5:**

1. 192.168.122.1
2. RealtekU\_79:0c:75 (52:54:00:79:0c:75)
3. The device with the IP address 192.168.122.1
4. The destination IP address and it's MAC address