Worksheet 17

1. How big is the MAC address space? The IPv4 address space? The IPv6 address space?

2. Suppose nodes A, B, and C each attach to the same broadcast LAN (through their adapters). If A sends thousands of IP datagrams to B with each encapsulating frame addressed to the MAC address of B, will C's adapter process these frames? If so, will C's adapter pass the IP datagrams in these frames to the network layer C? How would your answers change if A sends frames with the MAC broadcast address?

3. Why is an ARP query sent within a broadcast frame? Why is an ARP response sent within a frame with a specific destination MAC address?

4. For the network in the figure on Slide 6-47, the router has two ARP modules, each with its own ARP table. Is it possible that the same MAC address appears in both tables?

5. Consider the figure on Slide 6-69. How many subnetworks are there, in the addressing sense of Section 4.3?