Name: _____

CS422 Homework #6

Turn in to the TAs by 5:00 P.M. Friday, April 18th

In class, we considered the sequence of packets exchanged among two hosts and a router when an application creates a TCP connection, sends an octet of data, and closes the connection. In this homework, you will consider the packet exchanges that occur when a host boots, uses DHCP to obtain an IP address, and sends two UDP packets: one to the local network broadcast address, and a second to a specific destination host. When giving an answer, be specific: list the source and destination MAC addresses, frame type, source and destination IP addresses if IP is used (label addresses as belonging to a server or router), fields of an ARP packet if ARP is used, and the transport protocol port numbers if a transport protocol is used.

1. If a host on an Ethernet uses DHCP to obtain an IP address immediately after booting, what packets are sent and received assuming the DHCP server is on the local network?

2. After a host boots and obtains an IP address, assume an application on the host uses UDP to broadcast a request. What packets are exchanged?

3. After the above two steps, what packets will be exchanged if an application sends a UDP message to a host on a distant network?