

## Worksheet 6

1. Consider a TCP connection between Host A and Host B. Suppose that TCP segments traveling from A to B have source port number  $x$  and destination port number  $y$ . What are the source and destination numbers for segments traveling from B to A?
2. Explain why an application developer might choose to run an application over UDP rather than TCP?
3. A process in Host C has a UDP socket with port number 787. Both Host A and Host B each send a UDP segment to Host C with destination port number 787. Will both of these segments be directed to the same socket at Host C? If so, how will the process at Host C know that these two segments originated from two different hosts?
4. A Web server runs in Host C on port 80. This server uses persistent connections, and is currently receiving requests from two different Hosts, A and B. Are all of the requests being sent through the same socket at C? If there are being passed through different sockets, do both of the sockets have port 80? Why?
5. UDP and TCP checksum.
  - a. Suppose you have the following two bytes: 00110101 and 01101001. What is the 1s complement of these two bytes?
  - b. Suppose you have the following two bytes: 11110101 and 01101001. What is the 1s complement of these two bytes?
  - c. For the bytes in part a), give an example where one bit is flipped in each of the two bytes and yet the 1s complement doesn't change.