

Review Questions 11

Your Name:

Please print out this form (two-sided, if you can) and write your answers *legibly* in the spaces provided. If you can't write legibly, type.

1. Consider a TCP session from a client *A* to a server *B*. Suppose that the first packet from *A*, following the "SYN packet" has a sequence number of 200. Suppose that some later packet from *A* has a sequence number of 700, a total IP payload length of 500 bytes and no IP or TCP options. Assume that no packets are lost.

How many bytes have been sent from *A* so far (including the "current packet")?

1000 bytes

What sequence number would you expect in the next packet from *A*?

1200

What value should be in the acknowledgment number field of the next packet from *B* to *A*?

1200

2. Refer to Figure 3.42 in K&R. What causes the server to leave the CLOSE_WAIT state?

The application issuing a close() for the socket. This will trigger the server to send its own FIN if all pending ACKs have been received.

3. Suppose that a TCP sender measures RTTs of 100 ms and 200 ms during a session. If the initial value of the estimated RTT is 150 ms, what is the value after the next two samples have been processed? For simplicity, assume $\alpha=0.5$.

*We have that $EstimatedRTT = (1-\alpha)*EstimatedRTT + \alpha*SampleRTT$, where here $\alpha=0.5$.*

Assuming that the current $EstimatedRTT(0)=150ms$, this gives

*$EstimatedRTT(1)=0.5*150+0.5*100=125ms$*

*$EstimatedRTT(2)=0.5*125+0.5*200=162.5ms$*