CSc 4220/6220 – Practice Problem #3 **Fall 2018**

Names: _____ _____ _____

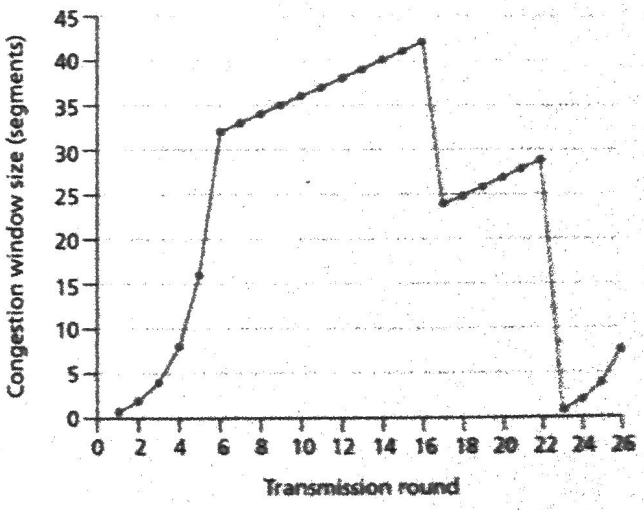
1. Consider a protocol that has just 4 header fields, with one of them being an 8-bit checksum. If the three other fields have the hex values given below, determine what the checksum field will be. Show all your work.

0x6C	0x3E
0xA2	checksum

6C - 0110 1100
3E - 0011 1110
1010 1010
A2 - 1010 0001 0
0100 1100
1
0100 1101

checksum = 1's comp
= 10110010
= 0xB2

2. Answer the following questions based on the given figure.
   a. What is the value of `ssthresh` at the 18th round?
   b. What is the value of `ssthresh` at the 24th round?
   c. During what transmission round is the 70th segment sent?
   d. Assuming a packet loss is detected after the 26th round by the receipt of a triple duplicate ACK, what will be the values of the congestion window size and of `sstresh`?



a) set to 1/2 cwnd at time of loss in round 16 ∴ ssthresh @ 18 = 42/2 = 21

b) set to 1/2 cwnd at time of loss in round 22 ∴ ssthresh @ 24 = 29/2 = [14.5] = 14

c) cwnd from round 1-6 sends 1+2+4+8+16+32 = 63 packets. Round 7 sends 33 packets, so 70th packet sent in round 7

d) ssthresh @ 26th round = 1/2 of cwnd at loss = 4
cwnd = ssthres + 3MSS = 7