Computer Communications and Networks (COMN)
2019/20, Semester 2

Assignment Part 1 Results Sheet

Forename and Surname:	Timothy Murphy
Matriculation Number:	s1732368

Question 1 – Number of retransmissions and throughput with different retransmission timeout values with stop-and-wait protocol. For each value of retransmission timeout, run the experiments for **5 times** and write down **average number of retransmissions** and **average throughput**.

Retransmission timeout (ms)	Average number of re-transmissions	Average throughput (Kilobytes per second)
5	5444.2	47.26
10	4114.7	46.60
15	1130.7	42.76
20	216.7	40.78
25	188	39.24
30	197	37.21
40	186.7	34.84
50	210	31.11
75	211.7	26.07
100	213.7	22.48

Question 2 – Discuss the impact of retransmission timeout value on number of retransmissions and throughput. Indicate the optimal timeout value from communication efficiency viewpoint (i.e., the timeout that minimizes the number of retransmissions and keeps the throughput as high as possible).

Throughput steadily decreases as the retransmission timeout is increased, this would be because there is a greater delay between lost packets being sent, and them being retransmitted. From 5 to 15ms timeout, the number of retransmissions is very high, likely because of the 10ms pipe delay in each pipe. The sweet spot appears to be 30ms, as this has one of the lowest number of retransmissions, while also having a decent throughput value. 20ms has a higher throughput, but only slightly and it also has a higher number of retransmissions.