In-class exercise 2

Name:_____ Student ID:_____

Question 1

Consider two hosts A and B, connected by links of rate 1.5 Mbps. Each link is 309 Km long. The propagation speed along the link is 2 x 10^8 m/s. There are 3 routers between hosts A and B. Each router spends 1.5 ms to perform error detection. Assume there is no congestion in the network. Host A is to send a 1,200-byte packet to host B.

(a) At what time the last bit of the packet leaves host A?

6.4 ms

(1 mark)

(b) At what time the last bit of the packet reaches the first router?

7.945 ms

(1 mark)

(c) What is the total end-to-end delay for the packet to reach host B?

36.28 ms

(1 mark)

Question 2

Suppose there are 120 client-server pairs. Each server link has the rate of 10 Mbps. Each client link has the rate of 100 Mbps. The network link has the rate of 1 Gbps. What is the maximum end-to-end throughput between the server and client?

8.33 Mbps

(1 mark)