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CS 360

Assignment #2

2/20/17

Question 1:

a) 2(110 RTT \* 0.001) + (2000 KB \* 2^10) \* 8 bits/(1.5 Mbps \* 10^6) = 11.14 seconds.

b) 11.14 seconds + (999 \* 0.11) = 121.03 seconds.

c) (2000 KB / 20) \* 0.11 RTT = 11 seconds.

d) 2(0.11 RTT) + 9(0.11 RTT) + 0.5(0.11 RTT) = 1.265 seconds.

Question 2:

a) 2\* ( (385000 km \* 1000 m) / (3 \* 10^8)) = 2.566 seconds.

b) 2.566 seconds \* 150 Mbps \* 1,000,000 = 384,900,000 bits.

c) The delay-bandwidth represents the number of bits on the link when the link is at capacity.

d) (25 MB \* 1024^2 \* 8 bits) / (150 Mbps \* 1000^2) = 3.96 seconds.

Question 3:

a) (5000 bits / (10 Mbps \* 1,000,000) \* 1000) \* 2 = 1.02 ms.

b) (1.02 ms / 2) \* 4 = 2.04 ms.

c) 0.04 ms + 0.5 ms = 0.54 ms.

d) 2(0.54 ms) = 1.08 ms.