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CS 118

Dis 1A

Homework 1

5. a. 150km/100kmph = 1.5hrs

2mins at each booth so 6mins for three booths

Therefore it takes 96 mins for the ten car caravan

b. 1.6mins at each booth so 4.8 mins for three booths

Therefore it takes 94.8 mins for the eight car caravan

6. a. propagation delay = m/s

b. transmission time = L/R

c. end-to-end delay = m/s + L/R

d. the last bit of the packet has just been pushed out of host A

e. it is at

f. it has arrived at host B

g. m/s = L/R

m = 0.00214 x

m = 535.714 km

8. a. 3mbps / 150kbps = 20 users supported

b. probability that a user is transmitting is 10%

c.

d.

13. a. 1st packet = 0 secs

2nd packet = L/R

3rd packet = 2L/R

nth packet = (n-1)L/R

average delay = L (n-1)/2R

b. since the queue is empty when each set of new packets arrive the average delay should be the same = L (n-1)/2R

25. a. 2mbps x (20,000 km / ) = 160kb

b. 160,000 bits

c. the max amount of bits in the link at any given time

d. 20,000km / 160,000bits = 125 meters

this is longer than a football field

e. s/R