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COSC370

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HW1

6) a) dprop = m / s

b) dtrans = L / R

c) dend-to-end = n(dprop + dtrans)

d) The last bit in the packet is on the link between Host A and Host B

e) The last bit in the packet is on the link between Host A and Host B

f) Host B

g) m / s = L / R **>>>** m = s(L / R) **>>>** m = (2.5 \* 108)(120 / (56 \* 1000)) **>>> 536km**

10) a) dend-to-end = 2(dproc) + ( i = 13⅀ (L / Ri) + (di / si))

b) dend-to-end = 2(3msec) + ( i = 13⅀ (1500 \* 8 / 2Mbps) + (di / (2.5 \* 108)))

= 2(.003) + 3(.006) + .02 + .016 + .004 = .064sec

= **64msec**

11) L / R + (d1 / s) + (d2 / s) + (d3 / s)

(1500 \* 8) / (2 \* 106) + (5000 / 2.5 \* 108) +(4000 / 2.5 \* 108) + (1000 / 2.5 \* 108)

= .046sec

= **46msec**

12) a) dqueue = (750 \* 8) / (2 \* 106) + 4((1500 \* 8) / (2 \* 106)) = .027sec

= **27msec**

b) dqueue = (nL + (L - x)) / R)

20) min{ Rs , RC , R / M}

31) a) dtrans = L / R **>>>** (8 \* 106) / (2 \* 106) = 4sec

--- dtrans = n(L / R) **>>>** 3(4) = 12sec

b) 10000 / (2 \* 106) = 5msec

--- 2(L / R) = 10msec

c) .015 + 799(.005) = 4.01sec

--- 4.01sec < 12sec, *message segmentation* cut the transmission delay by nearly a third

d) With packet loss the network loses small portions of messages instead of its entirety.

--- Large messages can slow the network for smaller or prioritized messages.

e) Packets must be reordered by their headers at the destination

-- Many packet headers can use up network memory space