CPSC 441
Tutorial-4 Solution

Question-1

a. 15
b. No, 290 Mbps > 150 Mbps
*c. 0.3 * 0.7^28*
*d. (0.3 * 0.7^28) * 29*
fraction of link capacity = 10/150

*e. (29C15) 0.3^15 * 0.7^14*
*f. Σ [(29Ci) 0.3^i * 0.7^(29-i)], where i goes from 16 to 29*

Question-2

(a)The link transmission delay = L/R = 16000 bits / 1000 Mbps = 0.016000 msec.
(b) The link can transmit 62500 packets per second

Question-3

(a) (m/s + L/R) seconds

(b) First bit is in midway in the link and has not reached host B

(c) m = Ls/R = (120 * 2.5 * 10^8/56*10^3) = 536Km

Question-4

(a) It takes D/P seconds time to propagate a packet of length L on this link

(b) End-to-End delay = dproc + dqueue + dtrans + dprop

= 0 + 0 + 1* 8 Kb/2000Kbps + 2500 * 10^3 m/2.5x10^8 m/s

= 0.004 + 0.01 s

= 0.014 s