p11 (contd)

assume the link Rates between router A & router B is R_{AB}, then no queuing delay will happen if

$$\min\left\{d_1 + \frac{L}{R_1},\ d_2 + \frac{L}{R_2}\right\} + \frac{L}{R_{AB}} < \text{May}\left\{d_1 + \frac{L}{R_1},\ d_2 + \frac{L}{R_2}\right\}$$

(the time when the first packet arrives A) / (the time spent on sending first packet on the AB link) (the time when the second packet arrives A)

(d_1, d_2) which satisfy the above inequality expression are the answers ※

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p22. packet loss probability = p

(1) $(1-p)^N$ (2) X denotes the random variable of # times needed to transmit the packet

$P(X = n) = (1-k)^{n-1} \cdot k$ where $K = (1-p)^N$

$E[X] = \sum_{n=0}^{\infty} [1-K]^{n-1} \times K = \frac{1}{K} = (1-p)^{-N}$ (geometric distribution)

Therefore the average times of retransmittion is $\boxed{(1-p)^{-N} - 1}$ #