Topics Covered in Lecture 6

8-August, 2002

- Clearup the disctinction between inclusion-exclusion and SDP method.
- Diode problem

$$\begin{aligned} p_1 &= \textit{probability of working properly.} \\ p_2 &= \textit{probability of short circuited.} \\ p_3 &= \textit{open circuit probability.} \end{aligned}$$

  series combination works correctly.

$$S = \{(n_1, n_2, n_2) | n_1 \geq 1, n_2 \geq 0, n_3 \geq 0, n_1 + n_2 + n_3 = n\}$$

- $$\begin{aligned} s_1 &= \textstyle\sum_{n_1+n_2=n, n_1 \geq 1} \begin{pmatrix} n \\ n_1, n_2, 0 \end{pmatrix} p_1^{n_1} p_2^{n_2} \\ &= \textstyle\sum_{n_1=1}^{n} \begin{pmatrix} n \\ n_1 \end{pmatrix} p_1^{n_1} p_2^{n-n_1} \\ &= (p_1 + p_2)^n - p_2^n \\ &= (1 - p_3)^n - p_2^n \end{aligned}$$

- Chapter 1 is over.
- Random variable
- Discrete random variable
- Continuous random variable
- Probability mass function
- Cumulative distribution function
- Probability distribution function
- Deterministic random variable
- Binomial random variable