



Tutorial-1

1. A random variable x has the following probability distribution

x	0	1	2	3	4	5	6	7
P(x)	0	K	2K	2K	3K	K^2	$2K^2$	$7K^2+K$

- Find the value of K
 - Evaluate $P[X < 6]$ and $P[X \geq 6]$
 - If $P[X \geq C] > 1/2$ find minimum value of C
 - Evaluate $P[1.5 < x < 4.5/x > 2]$
2. A random variable X has the following probability distribution.

x	-2	1	0	1	2	3
P(x)	0.1	K	0.2	2K	0.3	3K

- Find K
- Evaluate $P(x < 2)$ and $P(-2 < x \leq 2)$
- Find the Cumulative distribution of x .

Evaluate the mean of x

- A bolt is manufactured by 3 machines A, B, and C. A turns out twice as many items as B and machines B and C produce equal number of items. 2% of bolts produced by A and B are defective and 4% of bolts produced by C are defective. All bolts are put into 1 stock pile and 1 is chosen from this pile. What is the probability that it is defective?
- An urn contains 10 white and 3 black balls. Another urn contains 3 white and 5 black balls. Two balls are drawn at random from the first urn and placed in the second urn and then 1 ball is taken at random from the latter. What is the probability that it is a white ball?