04.06.20

Module 2 Revision 4.

1. If X is uniformly distributed over $(-\alpha, \alpha)$, $\alpha > 0$. Find α so that (i) $P(X > 1) = 1/3$
(ii) $P(|X| < 1) = P[|X| > 1]$.

2. 5% of the observation in a normal distribution are below 5 and 25% of the observation are between 5 and 25. Find the mean & SD.

3. Find the value of k for the probability density $f(x)$ given below and hence find its mean & variance where

$$f(x) = \begin{cases} kx^3 & 0 < x < 1 \\ 0 & \text{otherwise} \end{cases}$$

4. The amount of time that a surveillance camera will run without having to be reset is a random variable having the exponential distribut with the parameter 50 days. Find the probability that such a camera will
(i) have to be reset in less than 20 days.
(ii) not have to be reset in atleast 60 days.