Summary

- If X~N(μ, σ^2), then Z=(X-μ)/σ ~N(0,1)
- If X has gamma distribution with parameter α and β, then its pdf is given by, $f(x) = \frac{\beta^{\alpha}}{\Gamma\alpha} e^{-\beta x} x^{\alpha-1}, x > 0$ and its mgf is given by, $\frac{1}{(1-t/\beta)^{\alpha}}$
- If X~U(a,b) so that f(x)=1/(b-a), a<x<b then Mean (b+a)/2=1 and Variance =$(b-a)^2/12$
- The pdf of Pareto distribution is given by, $f(x) = \frac{\alpha b^{\alpha}}{x^{\alpha+1}}$, x>b
- If Y ~N(μ, σ^2), then X=e^Y is called a log normal random variable. r^{th} raw moment is given by, $\mu_r' = e^{r\mu + r^2\sigma^2/2}$
- Here we have considered the real life situations and hence tried to find the parameters of the distribution i.e. the constants of the distribution
- We have found the probabilities of occurrence of different events.
- Given the mgf, we have identified the distribution, since moment generating function uniquely determines the distribution.
- We have also comment on skewness and kurtosis of the distribution with known parameters.
- Usually in any distribution probabilities are found by integrating the functions. But in normal distribution it is little tedious. Hence we use standard normal tables to find the probabilities. For any normal distribution, first we convert into standard normal variate and hence find the probabilities.