

MATH 451/551

Chapter 4. Common Discrete Distributions

4.5 Poisson Distribution

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Approximation to Binomial Distribution



Poisson Distribution



Poisson Distribution

A discrete random variable X with probability mass function

$$f(x) = \frac{\lambda^x e^{-\lambda}}{x!}, \quad x = 0, 1, 2, \dots$$

for $\lambda > 0$ is *Poisson*(λ) random variable.

Mean



Variance





Skewness



Kurtosis





R Functions

Function	Returned Value
<code>dpois(x, λ)</code>	calculates the probability mass function $f(x)$
<code>ppois(x, λ)</code>	calculates the cumulative mass function $F(x)$
<code>qpois(u, λ)</code>	calculates the percentile (quantile) $F^{-1}(u)$
<code>rpois(m, λ)</code>	generates m random variates

Thank You



THANK YOU!