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THEORETICAL DISTRIBUTION

Binomial Distribution, Poisson Distribution, Normal Distribution

Binomial

Constants of Binomial Distribution

No. of Successes (x)	*Probability*
0	$n_{co}p^o q^n = q^n$
1	$n_{c1}pq^{n-1}$
2	$n_{c2}p^2q^{n-2}$
3	$n_{c3}p^3q^{n-3}$
r	$n_{cr}p^r q^{(n-r)}$
n	$n_{cn}p^n q^o = p^n$

$(p+q)^n$	$=1$
Mean	$= np$
Variance	$= npq$
Standard Deviation	$= \sqrt{npq}$
Skewness (β_1)	$= \dfrac{(q-p)^2}{npq}$
Kurtosis (β_2)	$= 3 + \dfrac{1-6pq}{npq}$

Poisson

No. of Successes	*Probabilities*
0	$e - m$
1	$m.e^{-m}$
2	$\dfrac{m^2.e^{-m}}{2!}$
3	$\dfrac{m^3.e^{-m}}{3!}$
r	$\dfrac{m^r.e^{-m}}{r!}$
n	$\dfrac{m^n.e^{-m}}{n}$

Mean	$= m = p$
Standard Deviation	$= \sqrt{m}$
Skewness (β_1)	$= \dfrac{1}{m}$
Kurtosis (β_2)	$= 3 + \dfrac{1}{m}$
Variance	$= m$