x^{ly} x $\div$ by

$= \sum_{x=2}^{\infty} \frac{e^{-\mu}\mu^{x}}{(x-2)!} + \mu - \mu^2$

$\mu^{x-2} + \mu - \mu^2$

$- \mu^2$

1) $\mu = \sum' x\, p(x)$

$p(x) = \frac{e^{-\mu}\mu^{x}}{x!}$

$= \sum_{x=0}^{\infty} x \cdot \frac{e^{-\mu}\mu^{x}}{x!}$

$= \sum_{x=0}^{\infty} \frac{e^{-\mu}\mu^{x}}{(x-1)!}$

$= \sum_{x=1}^{\infty} \frac{\mu e^{-\mu}\mu^{x-1}}{(x-1)!}$ ($\because$ x^{ly} $\div$ by μ)

$= \mu \times e^{-\mu} \left\{ 1 + \frac{\mu}{1!} + \frac{\mu^2}{2!} + \dots \right\}$

$= \mu \times e^{-\mu} e^{\mu}$

$\underline{\mu = \mu}$

$V = \sum' x^2 p(x) - \mu^2$

$\sum' [x(x-1) + x]\, p(x) - \mu^2$

$= \sum' [x(x-1)]\, p(x) + \sum' x\, p(x) - \mu^2$

$= \sum_{x=0}^{\infty} x(x-1) \frac{e^{-\mu}\mu^{x}}{(x-2)!} + \mu - \mu^2$

x^{ly} x $\div$ by μ^2

... mean, sd, variance for poisson ...bution.

$\mu = \sum x\, p(x)$

$= \sum_{x=2}^{\infty} \frac{e^{-\mu}\mu^x}{(x-2)!} + \mu - \mu^2$

$= \sum_{x=2}^{\infty} \frac{\mu^2 e^{-\mu}\mu^{x-2}}{(x-2)!} + \mu - \mu^2$

$= \mu^2 e^{-\mu}\{1 + \frac{\mu}{1!} + \frac{\mu^2}{2!} + \dots\} + \mu^2 - \mu^2$

$= \mu^2 \cancel{e^{-\mu}} \times \cancel{e^{\mu}} + \mu - \mu^2$

$= \mu^2 + \mu - \mu^2$.

$\underline{V = \mu}$ $\therefore$ $SD = \sqrt{V} = \sqrt{\mu}$

2) $\mu = \sum x\, p(x)$

$p(x) = \frac{e^{-\mu}\mu^x}{x!}$

$= \sum_{x=0}^{\infty} x \times \frac{e^{-\mu}\mu^x}{x!}$

$= \sum_{x=1}^{\infty} \frac{e^{-\mu}\mu^x}{(x-1)!}$

$= \sum_{x=1}^{\infty} \frac{\mu e^{-\mu}\mu^{x-1}}{(x-1)!}$ $(x^{1/2} \div b_4 \mu)$

$1/\mu = \mu^{-1} \times \mu^2$

$= \mu \times e^{-\mu}\{1 + \frac{\mu}{1!} + \frac{\mu^2}{2!} + \dots$

$= \mu \times e^{-\mu} e^{\mu}$

mean, sd, variance for poisson

on.

$\sum x\, p(x)$

$\underline{\mu = \mu}$

$V = \sum x^2 p(x) - \mu^2 \Rightarrow \sum [x(x-1)+x]\, p(x) - \mu^2$

$\because p(x) = \frac{e^{-\mu}\mu^x}{x!}$

$= \sum [x(x-1)]\, p(x) + \sum p(x) - \mu^2$

$= \sum_{x=0}^{\infty} x(x-1)\frac{e^{-\mu}\mu^x}{(x-2)!} + \mu - \mu^2$

$\times^{ly}$ & $\div$ by μ^2

$= \sum_{x=2}^{\infty} \frac{e^{-\mu}\mu^x}{(x-2)!} + \mu - \mu^2$

$= \sum_{x=2}^{\infty} \frac{\mu^2 e^{-\mu}\mu^{x-2}}{(x-2)!} + \mu - \mu^2$

$= \mu^2 e^{-\mu}\left\{1 + \frac{\mu}{1!} + \frac{\mu^2}{2!} \dots\right\} + \mu - \mu^2$

$= \mu^2 e^{-\mu} \times e^{\mu} + \mu - \mu^2$

$= \mu^2 + \mu - \mu^2$

$V = \mu \quad \therefore SD = \sqrt{V} \Rightarrow \sqrt{\mu}$