

$$P(y; \mu) = \frac{\mu^x}{x!} e^{-\mu}$$

$$= \mu^y \frac{1}{y!} e^{-\mu} \log\left(\frac{\mu}{y}\right)$$

$$= e^{y \log \mu - \log(y!)} e^{-\mu}$$

$$= \exp \left[y \log \mu - \log(y!) - \mu \right]$$

$$\mu = y$$

$$\exp \left[y \log \mu - \log(y!) - \mu \right]$$

$$C(y, \phi) = -\log(y!)$$

$$\eta = \mu$$

$$T = (\phi) y$$

$$\eta = \mu$$

$$\theta = \theta$$