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a) $P(X=x \mid x>0) = \dfrac{\lambda^x}{x!\,(\exp(\lambda)-1)}$, $x = 1, 2, \dots$

versemblança: $\prod_{i=1}^{n} \dfrac{\lambda^x}{x!\,(e^\lambda-1)} = \dfrac{\lambda^{\Sigma x}}{\prod(x!)\cdot(e^\lambda-1)^n}$

log-versemblança: $\log\left(\dfrac{\lambda^{\Sigma x}}{\prod(x!)\cdot(e^\lambda-1)^n}\right) = \log(\lambda)^{\Sigma x} - \log\left(\prod(x!)\cdot(e^\lambda-1)^n\right) = \Sigma x \log(\lambda) - \left(\Sigma \log((x!)) + \log(e^\lambda-1)^n\right) =$

$= \Sigma x \log(\lambda) - \Sigma \log(x!) - \log(e^\lambda-1)^n =$

$= \boxed{\Sigma x \log(\lambda) - \Sigma \log(x!) - n\log(e^\lambda-1)}$

funció score: $\dfrac{d\ell(\lambda \mid \underline{x})}{d\lambda} = \Sigma x\cdot(1/\lambda) - 0 - n\cdot\left(\dfrac{e^\lambda}{e^\lambda-1}\right) =$

$= \boxed{\dfrac{\Sigma x}{\lambda} - \dfrac{n e^\lambda}{e^\lambda-1}}$