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PS7 - Q1.3

Maximum likelihood estimate for λ .

$$\frac{d}{d\lambda} (\log P(X; \lambda)) = 0$$

$$\frac{d}{d\lambda} (-\lambda + X \log \lambda - \log(X!)) = 0$$

$$-1 + \frac{X}{\lambda} - 0 = 0$$

$$\frac{X}{\lambda} = 1$$

$$X = \hat{\lambda}$$

So, $\hat{\lambda}$, maximum likelihood estimate for λ , is equal to X .

Refer to submitted markdown PDF file for more explanation.