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Let $(X_i)_i \overset{iid}{\sim} \mathcal{P}(\mu_1)$, $(Y_i)_i \overset{iid}{\sim} \mathcal{P}(\mu_2)$ be two jointly independent sequences of Poisson random counts with parameter μ_i, $i \in \{1, 2\}$, respectively. Further, define

$$\hat{\mu}_{1(n)} = \frac{1}{n}\sum_{i=1}^{n} X_i, \qquad \hat{\mu}_{2(n)} = \frac{1}{n}\sum_{i=1}^{n} Y_i, \quad n \in \mathbb{N}.$$

Derive the asymptotic variance $\sigma^2 > 0$, say, of

$$Z_n = \sqrt{n}(\hat{\mu}_{1(n)} + \hat{\mu}^2_{2(n)})$$

as $n \to \infty$ for $\mu_1 = 1$ and $\mu_2 = 2$.

Calculate the missing numerical value. **The numerical result has to be given as an exact values without any rounding.** **4 of 4 points**

4 of 4 points

$\sigma^2 =$

33 ✓

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Create an inspection request?

Please note that this document will become a part of your exam file!
- Be polite and friendly.
- Describe your rationale as precisely as possible.

Dynexite, 19.07.2021

Request for correction of this item

Dear sir or madam, ...

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