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Consider a GLM $E(\mathbf{Y}) = g(\boldsymbol{\mu}) = \mathbf{X}\boldsymbol{\beta}$, where g is the **canonical** link, $\boldsymbol{\beta} = (\beta_1, \beta_2)'$ and

$$\mathbf{X} = \begin{pmatrix} 1 & 0 \\ 0 & 1 \\ 1 & -1 \end{pmatrix}.$$

Further assume that the responses Y_1, Y_2, Y_3 are jointly independent with $Y_i \sim \mathcal{P}(\mu_i)$, where $\mathcal{P}(\mu_i)$ denotes the Poisson distribution with parameters $\mu_i = 2i^2$, $i \in \{1, 2, 3\}$.

Determine the expected Fisher information matrix

$$\mathcal{I}_F = \begin{pmatrix} i_1 & i \\ i & i_2 \end{pmatrix}$$

with respect to the parameter vector $\boldsymbol{\beta}$.

⋮ Calculate the missing numerical values. **For all numerical results the exact values have to be provided without any rounding.**

3 of 3 points $i_1 =$

1 of 1 point

20 ✓

 $i_2 =$

1 of 1 point

26 ✓

 $i =$

1 of 1 point

-18 ✓

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- Describe your rationale as precisely as possible.

Dynexite, 19.07.2021

Request for correction of this item

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