Problem 14.2

The data in gibbs_coal.csv contains time series of the annual number of coal mining disasters in the UK from 1851-1961 [7]. In this question we are going to use Gibbs sampling to estimate the point in time when legislative and societal changes caused a reduction in coal mining disasters in the UK. A model for the number of disasters Dt in a particular year t is,

$$D_t \sim \begin{cases} Poisson(\lambda_1), & \text{if } t \le n \\ Poisson(\lambda_2), & \text{if } t > n \end{cases}$$