(4) $$P(X=x) = \frac{\lambda^x e^{-\lambda}}{x!}$$

First, we solve with the sample mean,

$$\frac{1}{\lambda} = \frac{\sum x \times f}{\text{Total months}} = \frac{111}{100} = 1.11$$

$\sum f$

Expected frequency for "k" injuries per month = $100 \times P(x=k)$

I performed the two chi-square tests with the sample mean and a mean = 1 and got

43.88169 and 25.11419.

I have a small confusion on choosing the critical value but the two chi-squares are very large and it doesn't matter and I would [illegible] null hypothesis in both the

just reject the [illegible]

cases.

The difference between the two cases is that the mean is given in (b) and it is not given in (a). The confusion I had was based on this difference and how to choose the critical value.

Part (b) is used when external information such as industry standards, previous studies, etc. suggest a theoretical rate of occurrence.

You are testing the fit of the data to a known or expected rate, possibly to validate consistency with other findings or assumptions.

Part (a) is used when there is no prior knowledge about the expected rate of occurrences.

You are analyzing new types of data or [illegible] standards

You are [illegible] situations where external benchmarks are not established. It can also be considered when the dataset is assumed to provide a sufficient and unbiased estimate of the mean.