Hypothesis test

Since in 2020 the coronavirus broke out, we will look into the police shooting events happened from 2015 to 2019.

Now that we want to study the distribution of the number of everyday shootings, we first construct a histogram to give a rough knowledge. After gathering the four-year data together, we find that the data shown by the histogram fit a Poisson distribution to some extent, which motivate us to use hypothesis test to prove our view.

Now we give the null hypothesis that the number of everyday shootings from 2015 to 2019 follows a Poisson distribution. Then we approximate the parameter k using the equation: