ASSIGNMENT 2 DUE 20 NOVEMBER 2020

1. Records pertaining to the monthly number of job-related injuries at an underground coal mine were being studied by a federal agency. The values for the past 100 months were as follows:

Injuries per Month	*Frequency of Occurrence*
0	35
1	40
2	13
3	6
4	4
5	1
6	1

(a) Apply the chi-square test to these data to test the hypothesis that the underlying distribution is Poisson. Use the level of significance $\alpha = 0.05$. **[6]**
(b) Apply the chi-square test to these data to test the hypothesis that the distribution is Poisson with mean 1.0. Again let $\alpha = 0.05$. **[6]**
(c) What are the differences between parts **(a)** and **(b)**, and when might each case arise? **[3]**

2. Two types of jobs (A and B) are released to the input buffer of a job shop as orders arrive, and the arrival of orders is uncertain. The following data are available from the last week of production:

Day	*Number of Jobs*	*Number of As*
1	83	53
2	93	62
3	112	66
4	65	41
5	78	55

Develop an input model for the number of new arrivals of each type each day. **[10]**