Q1. A genetics engineer was attempting to cross a tiger and a cheetah. She predicted a phenotypic outcome of the traits she was observing to be in the following ratio 4 stripes only: 3 spots only: 9 both stripes and spots. When the cross was performed and she counted the individuals she found 50 with stripes only, 41 with spots only and 85 with both. According to the Chi-square test, did she get the predicted outcome?

Q2. Nadir is testing an octahedral die to see if it is unbiased. The results are given in the table below.

Score	1	2	3	4	5	6	7	8
Frequency	7	10	11	9	12	10	14	7

Test the hypothesis that the die is fair.

Q3. Employers particularly want to know which days of the week employees are absent in a five day work week. Most employers would like to believe that employees are absent equally during the week. That is, the average number of times an employee is absent is the same on Monday, Tuesday, Wednesday, Thursday, or Friday. Suppose a sample of 20 absent days was taken and the days absent were distributed as follows:

Day of the Week Absent

	Monday	Tuesday	Wednesday	Thursday	Friday
Number of Absences	5	4	2	3	6

Problem

For the population of employees, do the absent days occur with equal frequencies during a five day work week? Test at a 5% significance level.