Q.1 Fit a poisson distribution distribution to following data :

X	0	1	2	3	4
f	192	100	24	3	1

And compare the calculated frequencies with actual observed one.

Q.2 There are 400 students in the first year class of an engineering college. The probability that any student requires a copy of a particular mathematics book from the college library on any day is 0.1. How many copies of the book should be kept in the library so that the probability may be greater than 0.95 that none of the students requiring a copy from the library has to come back disappointed.(use normal approximation to binomial distribution).(given $\phi(1.65)= 0.45$)

Q.3 Buses arrive at a particular bus stop after every 15 minutes, starting from 6 AM. If a Passenger arrives at the stop at a random time is uniformly distributed between 9 to 9:30, find the probability that he waits for

(i) Less than 5 minutes for a bus.

*(ii)*At least 10 minutes for a bus.