1. The number of messages left on your answering machine during 14 successive days are 2, 1, 1, 3, 1, 0, 0, 3, 0, 1, 4, 0, 0, 2..
2. Select a model for this problem.
3. Find the maximum likelihood estimate of the average number of messages left per day on your answering machine in this model for general n and general data.
4. Compute the MLE for the above data.
5. Let 1,2,….,n be a random sample from the following distributions, find the maximum likelihood estimate of in each case.
6. l, and zero elsewhere,
7. l, and zero elsewhere,
8. l
9. Let 1,2,….,n be a random sample from an exponential distribution with mean , . Find the maximum likelihood estimate of , and show that it is consistent and asymptotically normal. What is the maximum likelihood estimate of
10. Let 1,2,….,n be a random sample from a Poisson distribution with parameter . Find the maximum likelihood estimate of .
11. Let 1,2,….,n be a random sample from a population distribution with mean and variance 2. Let .
12. Show that is an unbiased estimate of if
13. Consider the class of all unbiased estimates of of the form where ,…., are such that Show that the estimate with the least variance in this class is given by

(note that implies that )