

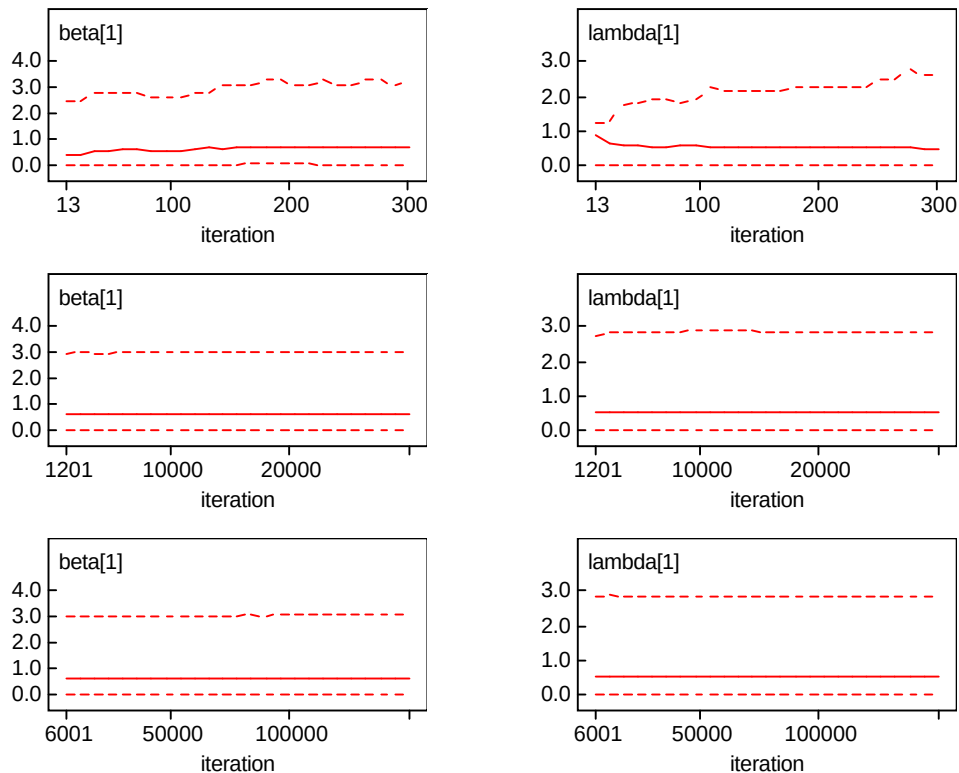
Problem 7.13 Marinela Capanu

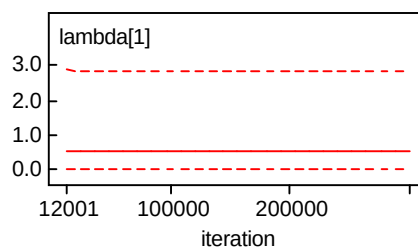
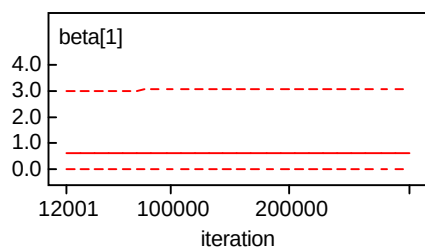
The following code in WinBugs was used:

```
model
{
  for (i in 1 : N) {
    beta[i]~dgamma(a,b)
    lambda[i]~dgamma(alpha,beta[i])
    x[i]~dpois(lambda[i]) }
  }
list(x=c(0,0,0,0,0,0,0,1,1,1,1,1,1,1,1,1,1,2,2,2,2,2,2,2,3,3,3,3,3,3,3,4,4,4,4,4,4,4,5,5,5,5,5,5,5,6,6,6,6,6,6,6,6,6,7,7,7,7,7,7,7,8,8,8,8,9,9,9,10,10,10,10,10,11,11,11,11,11,11,11,11,12,12,12,12,13,13,13,13,13,14,14,15,16,16,16,16,17,17,17,18,18,18,19,19,19,19,20,20,21,21,22,22,22,22,23,25,25,25,25,25),a=0.1,b=1,alpha=1.25,N=127)
```

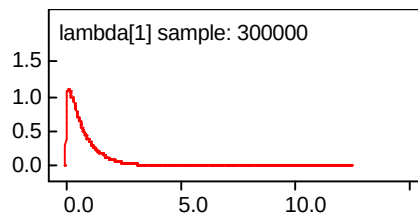
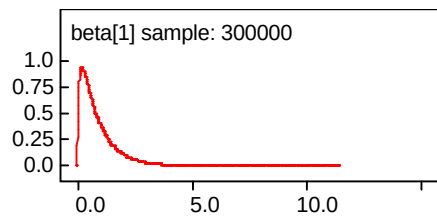
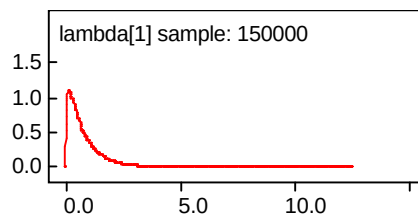
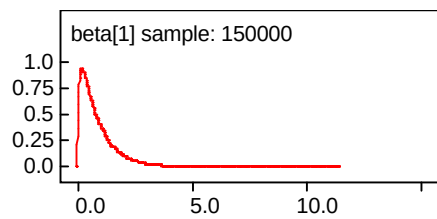
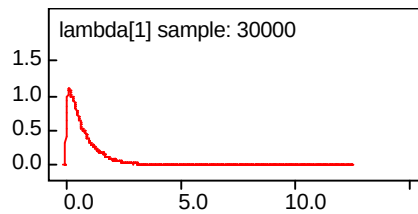
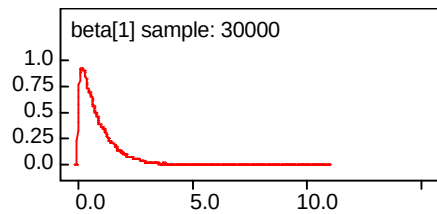
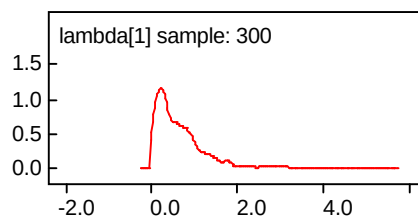
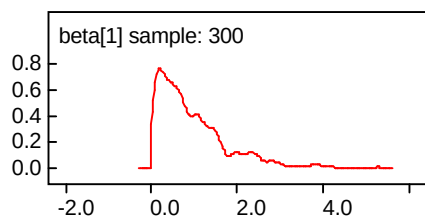
The results, at different number of iterations until convergence,are presented below:

RUNNING QUANTILES





DENSITY



STATISTICS

node	mean	sd	MC error	2.5%	median	97.5%	start	sample
beta[1]	0.9789	0.8743	0.05538	0.04996	0.7311	3.383	1	300
lambda[1]	0.6921	0.7178	0.03324	0.03893	0.5018	2.745	1	300
beta[1]	0.8669	0.8101	0.005243	0.04128	0.6282	3.015	1	30000
lambda[1]	0.7747	0.7758	0.005151	0.03196	0.5375	2.854	1	30000
beta[1]	0.8689	0.8257	0.002538	0.04243	0.6249	3.075	1	150000
lambda[1]	0.7695	0.7672	0.002304	0.03135	0.5341	2.844	1	150000
beta[1]	0.8664	0.8271	0.001702	0.0423	0.6206	3.079	1	300000
lambda[1]	0.7697	0.7655	0.001511	0.03127	0.5352	2.844	1	300000
beta[1]	0.8675	0.8277	0.001544	0.04242	0.6217	3.081	1	350000
lambda[1]	0.7691	0.7649	0.001457	0.03137	0.5346	2.845	1	350000

HISTORY

