For this assignment we will analyze R’s crime data:

```r
> library(MASS)
> data(UScrime)
> ?UScrime
> y <- UScrime[,16]
> x <- as.matrix(UScrime[,,-16])
```

Analyze these data using the model described in:


- Write and turn in commented R code to analyze the Bayesian Lasso using Metropolis sample for the regression coefficients.

- Write and turn in commented R code to analyze the Bayesian Lasso using the augmented model in (5) of Park and Cassella.

- Which algorithm do you prefer? Justify your choice.

- Fit this model for several values of $\lambda$ and with $\lambda$ having a gamma prior as in Section 3.2. Compare the results. Are the data informative about $\lambda$?

- In which situations would you use the Bayesian Lasso rather than the usual Bayesian linear regression model with improper priors for the regression coefficients? Justify your choice.

- What is the advantage of the Bayesian Lasso over frequentist penalized regressions such as the Lasso?