

## Question 2

It has often been claimed that the death penalty is applied in a racially discriminatory fashion. This problem uses data from a classic study by David Baldus (Reprinted by permission from Michael O. Finkelstein and Bruce Levin, *Statistics for Lawyers*, pp. 453-455. Copyright ©1990. Springer-Verlag New York, Inc.) that investigates this issue. Data were provided by the Georgia Parole Board, the Georgia Supreme Court, lawyers involved in the cases, and so forth, on the following variables:

- `obsnum` = observation number.
  - `death` = 1 if got death penalty; 0 otherwise.
  - `bikdef` = 1 if black defendant; 0 otherwise.
  - `whtvict` = 1 if white victim; 0 otherwise.
  - `aggcirc` = number of aggravating circumstances.
  - `fevict` = 1 if female victim; 0 otherwise.
  - `stranger` = 1 if stranger victim; 0 otherwise.
  - `multvic` = 1 if 2 or more victims; 0 otherwise.
  - `multstab` = 1 if multiple stabs; 0 otherwise.
  - `yngvict` = 1 if victim 12 or younger; 0 otherwise.
- (a) Run a linear probability model using `death` as the dependent variable and the other variables as explanatory variables. What do you find?
- (b) Now, estimate the same model with the probit estimator. What are the advantages of this estimator? What can we tell by looking at the coefficients? If your statistical package allows you to easily estimate probit derivatives (like the `dprobit` command in Stata), estimate these derivatives. Are the results similar to the linear probability model?