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Introduction to Microeconometrics

Problem Set 3: Maximum Likelihood II

For the class we will use data from the 2002 Medical Expenditure Panel Survey (MEPS). Open the data set **mus10cs.dta**, which contains the following variables:

`docvis`	number of doctor visits
`private`	dummy for having private insurance
`chronic`	dummy for having a chronic condition
`female`	dummy for being female
`black`	dummy for being black
`age`	age [years]
`educ`	years of schooling
`married`	dummy for being married
`income`	income [dollar/1000]

1. Suppose we are interested in whether an individual goes to a doctor at least once a year. Generate a binary indicator for at least one doctor visit a year and estimate a probit model with this indicator as dependent and the variables `private`, `chronic`, `female`, and `income` as explanatory variables.

2. Perform several Wald tests on the coefficients of your model, individually and jointly.

3. An alternative test is the likelihood ratio (LR) test. Estimate two probit models, an unrestricted model and a restricted model, and calculate the LR test statistic to test the restriction you imposed.