

# ECON 5350 Problem Set #7

Due: Tuesday, November 3, 2009

Use GAUSS to create a Monte Carlo experiment that calculates the size of the  $t$  test. The Classical regression model is

$$y_i = \beta_0 + \beta_1 x_i + \epsilon_i$$

for  $i = 1, \dots, N$ . The parameters are set at  $\beta_0 = \beta_1 = 1$ ,  $x$  is drawn from the standard normal distribution, and the  $t$  test is for the slope coefficient. Experiment with the sample size ( $N$ ), error distribution (normal and chi-square distributions) and variance of the errors ( $\sigma_\epsilon^2$ ). Discuss the results.