Homework 4

ECON 8050: Macroeconomics II
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The process for $y = log(income)$ is:

$$y_{t+1} = \mu + \rho y_t + \sigma \varepsilon_{t+1}$$

where $\varepsilon \sim N(0, 1)$

(1) Set $\mu = 0$, $\rho = 0.9$ and $\sigma = 0.0242$. Discretize the process for y with 9 points. Download the Matlab code ghquad.m to compute Gauss-Hermit grids and weights. Use $10,000$ as maxit input. As an output, print out the vector of discretized y and the transition matrix.

(2) Simulate the Markov chain and compute the implied autocorrelation coefficient ($\hat{\rho}$). Note: use 1 million observations to simulate a persistent AR process. Disregard first 1000 observations. Report both $\hat{\rho}$ and $\hat{\sigma}$ computed from the simulated data.