Econ 342 February 18, 2008
Shakeeb Khan Due: February 28, 2008
Spring 2008

Problem Set 4

1. Chapter 6, page 375, #1. 385 # 1, page 399 #1.

2. Consider the following $AR(1)$ process

$$y_t = c_0 + \phi_0 y_{t-1} + \epsilon_t \tag{1}$$

where $|\phi_0| < 1$, ϵ_t is an i.i.d. sequence with variance $E[\epsilon_t^2] = \sigma^2$.

Propose a root-n consistent and asymptotically normal estimator of ϕ_0 and derive its asymptotic covariance matrix.

3. Consider the AR(2) process:

$$y_t = -0.5y_{t-1} + 0.25y_{t-2} + \epsilon_t$$

where ϵ_t is i.i.d, mean 0, variance σ^2.

   (a) Determine if the stability (stationarity) condition is satisfied.

   (b) Assuming $E[\epsilon_t^2] = 1$, establish the form of γ_0.