Computer Problem 3

Use the data below to estimate the parameters of a national consumption function:

$$C_t = \alpha + \beta Y_t + \epsilon_t$$

where C_t = aggregate consumption expenditure and
Y_t = aggregate disposable income.

Use an appropriate statistical test to examine the null hypothesis that the marginal propensity to consume (β) is (.95).

The following SAS program may be helpful for guidance in performing the Cochrane-Orcutt transformation (if you feel that is needed).

```
data truth1;
 input c y;
   clag=lag(c);
   ylag=lag(y);
   cards;
   206.3   226.6
   216.7   238.3
   230.0   252.6
         .
         .
         .
   579.6  634.2
data truth2; set truth1;
   cstar = c - ρ * clag;
   ystar = y - ρ * ylag;
proc print data=truth2;
proc reg;
   model cstar = ystar;
   output out=a p=predict r=resid;
proc print data=a;
proc plot data=a;
   plot cstar*ystar predict*ystar='p'/overlay;
   plot resid*ystar /vref=0;
```

Year	Consumption Expenditure	Disposable Income
1951	206.3	226.6
1952	216.7	238.3
1953	230.0	252.6
1954	236.5	257.4
1955	254.4	275.3
1956	266.7	293.2
1957	281.4	308.5
1958	290.1	318.8
1959	311.2	337.3
1960	325.2	350.0
1961	335.2	364.4
1962	355.1	385.5
1963	375.0	404.6
1964	401.2	438.1
1965	432.8	473.2
1966	466.3	511.9
1967	492.1	546.3
1968	536.2	591.0
1969	579.6	634.2

[a] Data are in billions of current U.S. dollars.

SOURCE: *Economic Report of the President* (Washington, D.C.: U.S. Government Printing Office, Jan. 1972), p. 212.

START