**Tutorial set #5**

**Question 1:**

Suppose that the process follows an AR(1) model, with , find the autocovariance function for the process in terms of and , (where is the white noise variance).

**Question 2:**

Let the process follows an AR(2) model, with the following special form: , use the general method to find the values of that make the process stationary.

**Question 3:**

Let the process follows an AR(2) model, with the following parameter values: :

1. is the process stationary?
2. find the weights in the general linear process.

**Question 4:**

Let the process follows an AR(2) model, for the following cases find the roots of the characteristic equation, and check if the process is stationary:

1. with parameters:
2. with parameters:

**Question 5:**

Find the Yule-Walker equations for the following models:

and solve these equations to get values for and .

**Question 6:**

For the attached two sets of data (data1) and (data2), do the following:

1. Plot the series, and check its stationarity in mean and variance.
2. plot the ACF and PACF , suggest a preliminary model for the data.
3. Fit the suggested models, and get acquainted with the MINITAB output.