Tutorial Sheet 1

1.1
Use software to produce the time series plots shown in Exhibits 1.1 and 1.2. The datafile file is named "larain".

1.2
Produce the time series plots displayed in Exhibit 1.3 and 1.4. The data file is named "color".

1.3
Simulate a completely random process of length 48 with independent, normal values. Plot the time series plot. Does it look "random"?

Repeat this exercise several times with a new simulation each time.

Check out set.seed() function and its effect on subsequent plots.

1.4
Simulate a completely random process of length 48 with independent, chi-square distributed values, each with 2 degrees of freedom.

Display the time series plot. Does it look "random" and non-normal?

Repeat this exercise several times with a new simulation each time.

1.5
Simulate a completely random process of length 48 with independent, t-distributed values each with 5 degrees of freedom.

Construct the time series plot.

Does it look "random" and non-normal?

Repeat this exercise several times with a new simulation each time.

1.6
Construct a time series plot with monthly plotting symbols for the Dubuque temperature series as in Exhibit 1.7.

The data are in the file named "tempdub".

1.7
Go to www.yahoo.ie.
Click Finance.
Click FTSE100.
Components.
Select BP.L.
Select Historical Prices.
Start date: 1 Jan 2003. End date: 29 Jan 2013.
Choose Weekly.
At bottom of page: Download to spreadsheet.
Remove unwanted columns.
Save file as BP.csv on desktop.
Copy and paste file to working directory.

```
BPdata<-read.csv("BP.csv",header=T)
class(BPdata)
head(BPdata)
BPdata<-ts(BPdata[,2],start=c(2003,1),end=c(2013,1),frequency=52)
class(BPdata)
plot(BPdata)
```

If, instead of choosing weekly, we had chosen monthly, with the ts(), frequency would have been set to 12.

Comment on the plot.