Week 1 Assignment

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HA 2.1 For each of the following series (from the fma package), make a graph of the data. If transforming seems appropriate, do so and describe the effect.

```
library(fma)
```

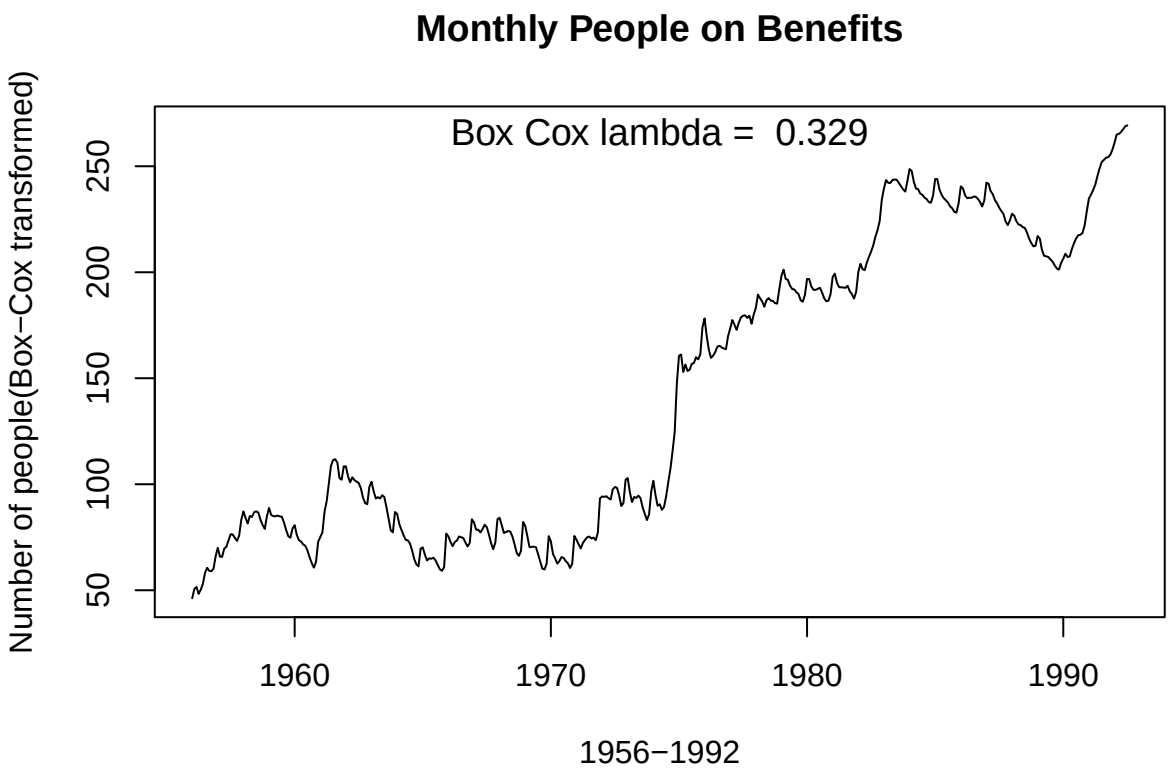
```
## Loading required package: tseries
## Loading required package: forecast
```

```
## Warning: package 'forecast' was built under R version 3.1.3
```

```
## Loading required package: zoo
##
## Attaching package: 'zoo'
##
## The following objects are masked from 'package:base':
##
##     as.Date, as.Date.numeric
##
## Loading required package: timeDate
## This is forecast 6.1
```

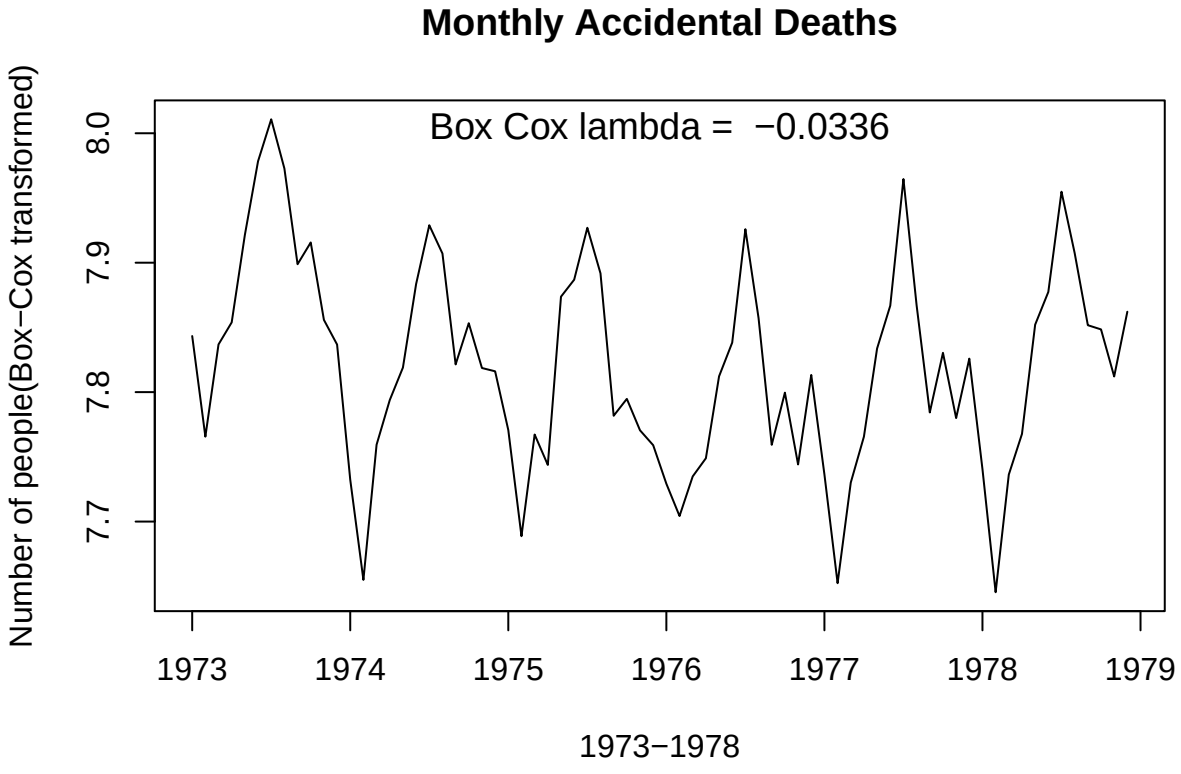
a) Monthly total of people on unemployed benefits in Australia (January 1956–July 1992).

```
lambda.benefits <- BoxCox.lambda(dole)
plot(BoxCox(dole, lambda.benefits), main="Monthly People on Benefits", xlab="1956-1992", ylab="Number o
title(main=paste("Box Cox lambda = ", signif(lambda.benefits, digits=3)), font.main=8, line=-1)
```



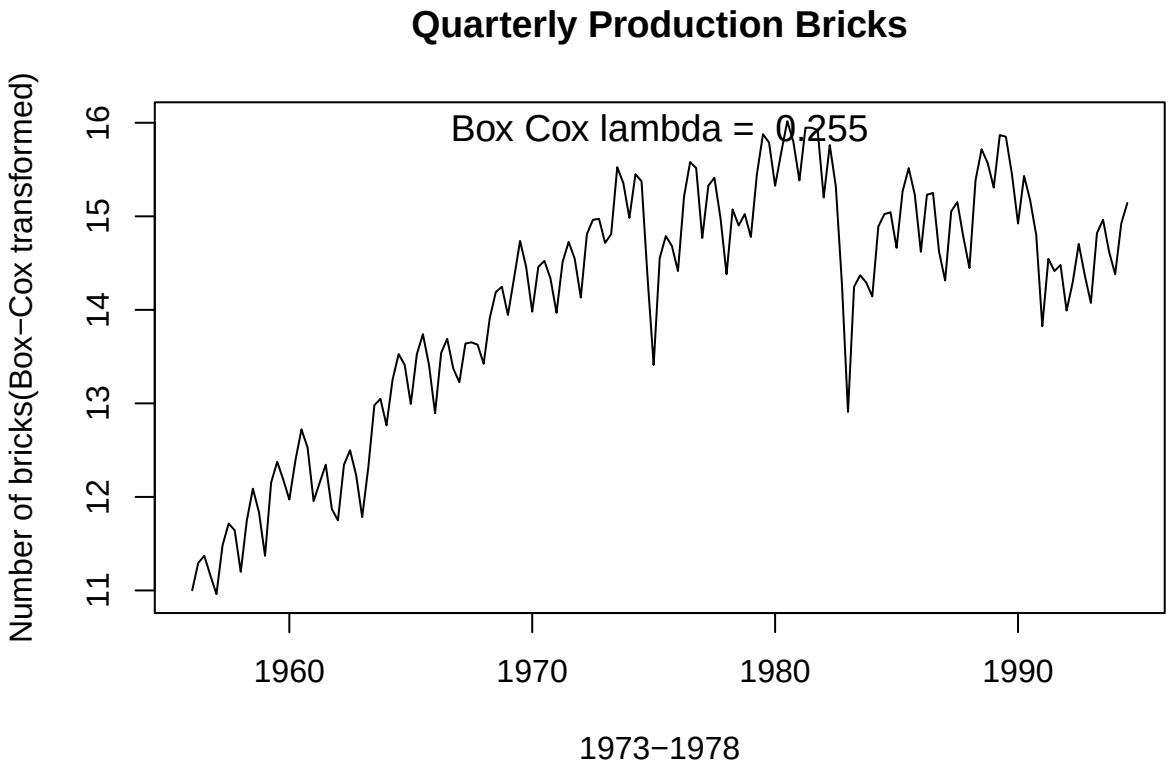
b) Monthly total of accidental deaths in the United States (January 1973–December 1978).

```
lambda.deaths <- BoxCox.lambda(usdeaths)
plot(BoxCox(usdeaths, lambda.deaths), main="Monthly Accidental Deaths", xlab="1973-1978", ylab="Number
title(main=paste("Box Cox lambda = ", signif(lambda.deaths, digits=3)), font.main=8, line=-1)
```



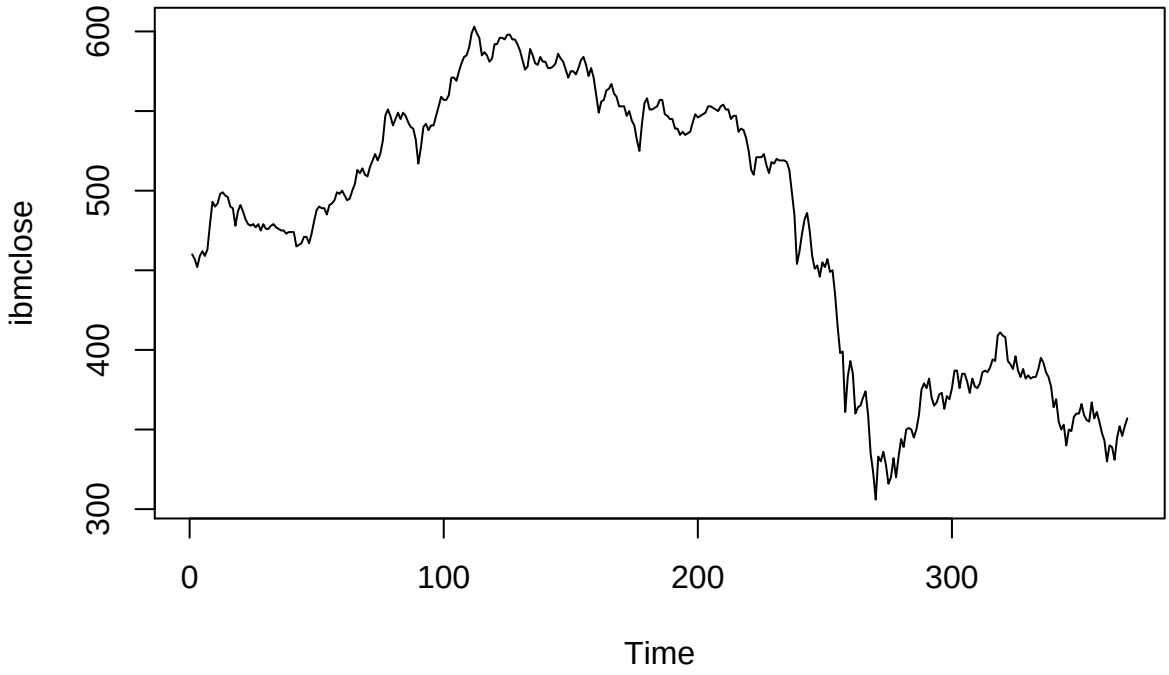
c) Quarterly production of bricks (in millions of units) at Portland, Australia (March 1956–September 1994).

```
lambda.bricks <- BoxCox.lambda(bricksq)
plot(BoxCox(bricksq, lambda.bricks), main="Quarterly Production Bricks", xlab="1973-1978", ylab="Number
title(main=paste("Box Cox lambda = ", signif(lambda.bricks, digits=3)), font.main=8, line=-1)
```

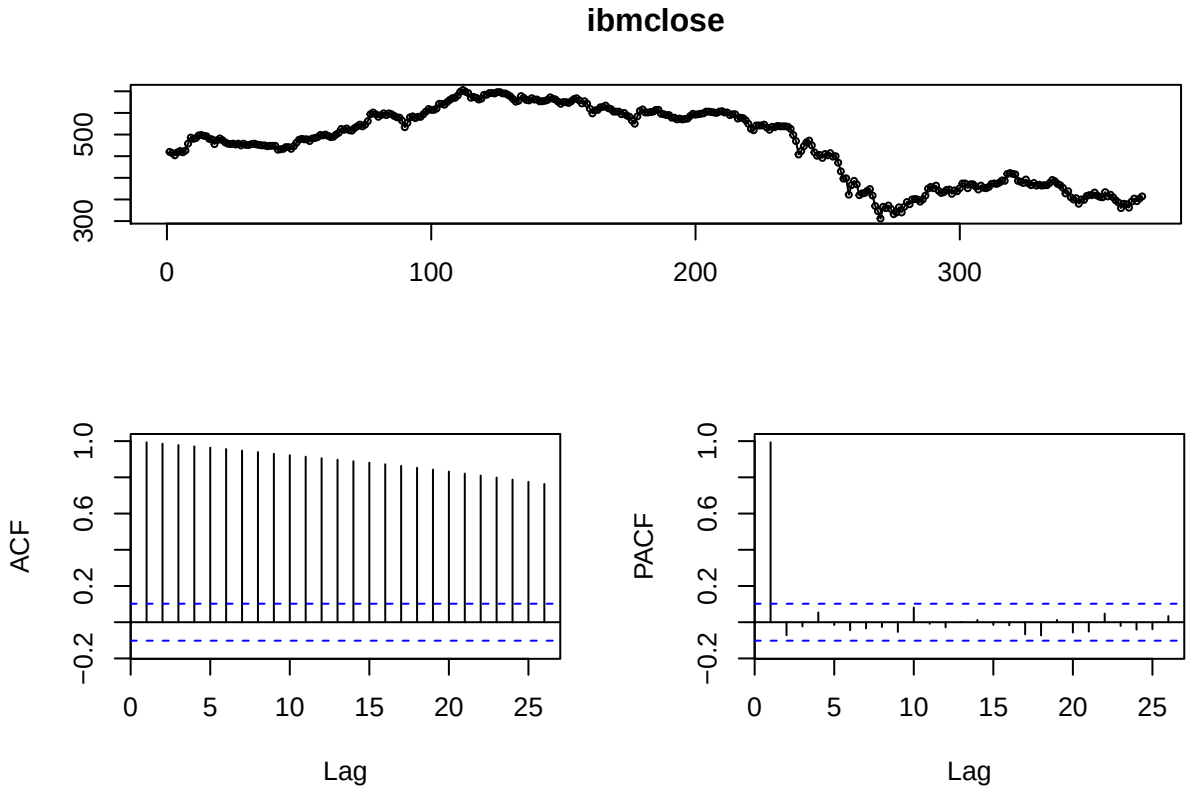


HA 2.3 Consider the daily closing IBM stock prices (data set ibmclose). a)Produce some plots of the data in order to become familiar with it.

```
plot(ibmclose)
```




```
tsdisplay(ibmclose)
```



b)Split the data into a training set of 300 observations and a test set of 69 observations. c)Try various benchmark methods to forecast the training set and compare the results on the test set. Which method did best?