R STUDIO – EXERCISE 9

QUESTION 1

The following data give the number of air-craft accidents that occurred during the various days of a week.

Day	Mon	Tue	Wed	Thur	Fri	Sat
No. of accidents	15	19	13	12	16	15

Test whether the accidents are uniformly distributed overthe week.

```
> n1 = 6
> obsfreq <- c(15,19,13,12,16,15)
> sum(obsfreq)
[1] 90
> 90/6
[1] 15
> expfreq <- c(15,15,15,15,15,15)
> H0: chicalsq = chitab
> H1: chicalsq != chitab
> chicalsq = sum(((obsfreq-expfreq)^2)/expfreq)
> chitab = qchisq(0.95,n1-1)
> chicalsq
[1] 2
> chitab
[1] 11.0705
> if(chicalsq <= chitab){print("Accept H0")} else{print("Reject H0")}
[1] "Accept H0"
```

QUESTION 2

Fit a Poisson distribution for the following data and also the test the goodness of fit.

x	0	1	2	3	4	5
f	142	156	69	27	5	1

```
> x <- 0:5
> obsfreq <- c(142,156,69,27,5,1)
> lambda = mean
> lambda <-(sum(obsfreq*x)/sum(obsfreq))
> expfreq = dpois(x,lambda)*sum(obsfreq)
> expfreq
[1] 147.151776 147.151776  73.575888
[4]  24.525296   6.131324   1.226265
> f1 = round(expfreq)
> sum(obsfreq)
[1] 400
> sum(f1)
[1] 400
> chicalsq = sum(((obsfreq - expfreq)^2)/expfreq)
> chitab = qchisq(0.95, 2)
> chicalsq
[1] 1.497198
> chitab
[1] 5.991465
> if(chicalsq <= chitab){print("Accept H0")} else{print("Reject H0")}
[1] "Accept H0"
```