

When a random variable takes the values 0,1,2,3,4,5 and 6, the observed frequencies are 109,53,131,12,35,21 and 12. Fit a Poisson distribution to the above data and test the goodness of fit.

RStudio

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Fibonacci series.R x Lab Assignment-2.R x 13-10-2020.R x

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```

46 x = c(0,1,2,3,4,5,6)
47 f = c(109,53,131,12,35,21,12)
48 Ef = sum(f)
49 Efx = sum(f*x)
50 lambda = Efx/Ef
51 expo = dpois(x,lambda)*sum(f)
52 f1 = round(expo)
53 print(sum(f))
54 print(sum(f1))
55 print(f-f1)
56 O=c(109,53,131,12,35,33)
57 E=c(62,111,100,60,27,13)
58 cat('chi^2 : ',chisq = sum((O-E)^2/E))
59 df=5
60 cat('chi^2_alpha : ',qchisq(0.95,df))
61 print('H0 is rejected')
62
63

```

67:1 # (Untitled) R Script

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```
> Ef = sum(f)
> Efx = sum(f*x)
> lambda = Efx/Ef
> expois = dpois(x,lambda)*sum(f)
> f1 = round(expois)
> print(sum(f))
[1] 373
> print(sum(f1))
[1] 373
> print(f-f1)
[1] 47 -58 31 -48 8 11 9
> O=c(109,53,131,12,35,33)
> E=c(62,111,100,60,27,13)
> cat('chi^square : ',chisq = sum((O-E)^2/E))
chi^square : 147.0849> df=5
> cat('chi^square_alpha : ',qchisq(0.95,df))
chi^square_alpha : 11.0705> print('H0 is rejected')
[1] "H0 is rejected"
> f
[1] 109 53 131 12 35 21 12
> f1
[1] 62 111 100 60 27 10 3
> |
```