Statics for Engineers

Lab Assessment-5

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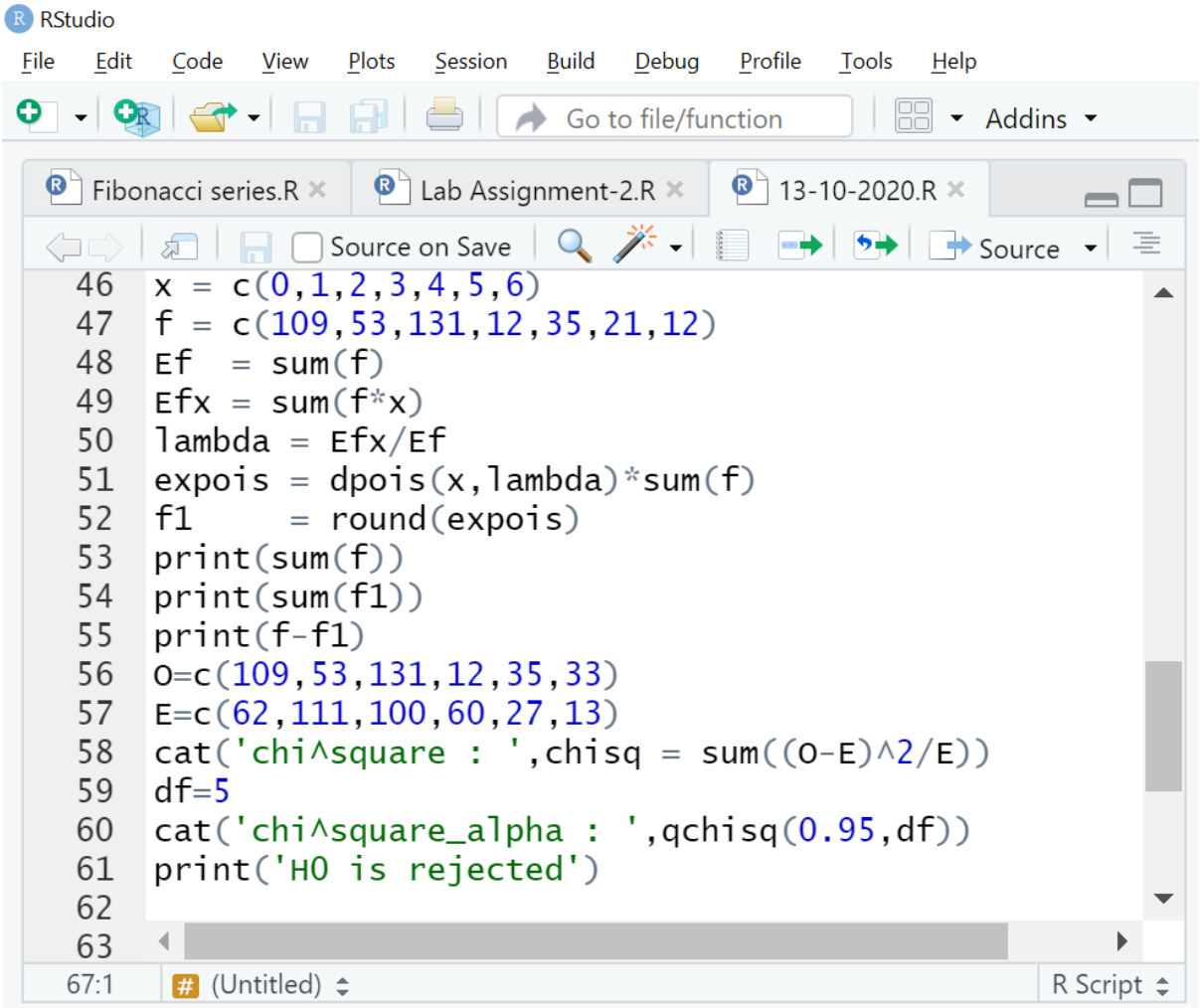
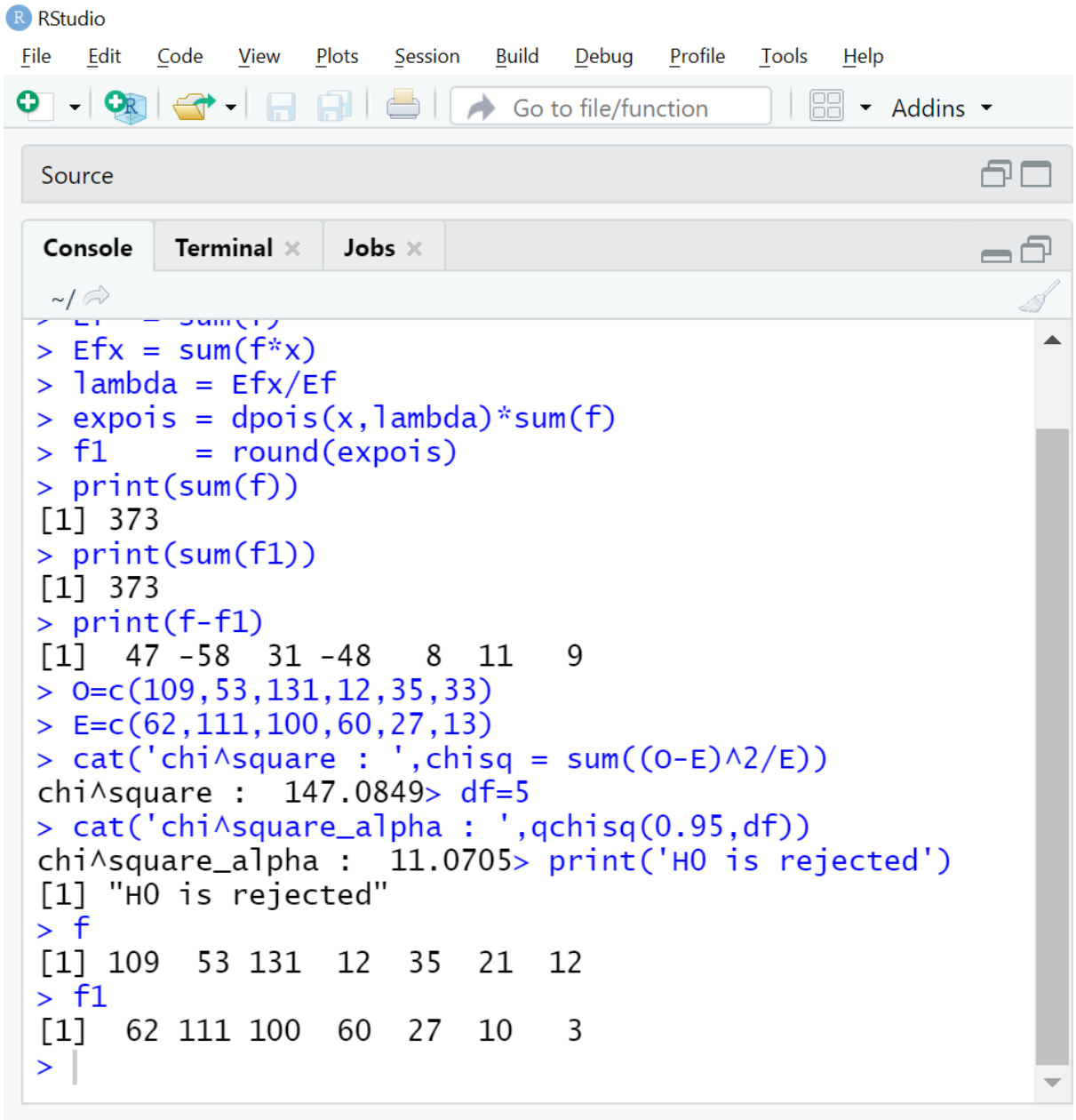
1. Write R code to solve the following problem:

   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
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function
Addins
Source
Console
Terminal
Jobs
~/
> 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
>