

Faculty of Computing

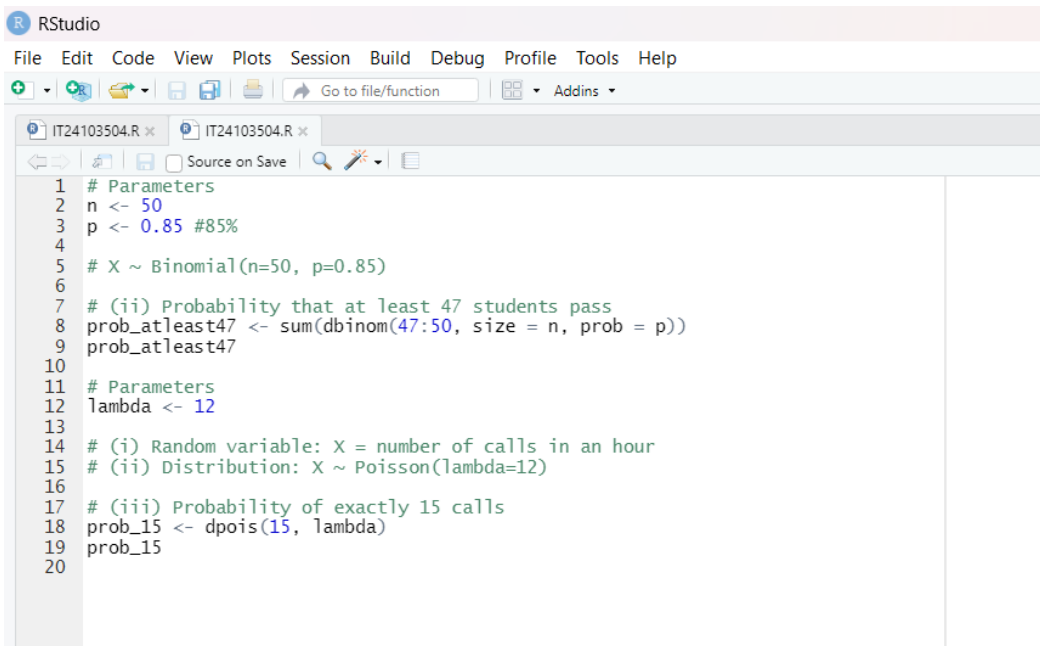
Year 2 Semester 1 (2025)

IT2120 - Probability and Statistics

Lab Sheet 06




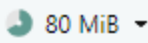



IT24103504

Exercise



```
1 # Parameters
2 n <- 50
3 p <- 0.85 #85%
4
5 # X ~ Binomial(n=50, p=0.85)
6
7 # (ii) Probability that at least 47 students pass
8 prob_atleast47 <- sum(dbinom(47:50, size = n, prob = p))
9 prob_atleast47
10
11 # Parameters
12 lambda <- 12
13
14 # (i) Random variable: X = number of calls in an hour
15 # (ii) Distribution: X ~ Poisson(lambda=12)
16
17 # (iii) Probability of exactly 15 calls
18 prob_15 <- dpois(15, lambda)
19 prob_15
20
```

EnvironmentHistoryConnectionsTutorial

RGlobal Environment

Values

lambda	12
n	50
p	0.85
prob_15	0.0723911201466387
prob_atl...	0.0460465788923018

```

20:1 (Top Level) ↕
Console Terminal x Jobs x
R 4.5.1 · ~/
> # Parameters
> n <- 50
> p <- 0.85 #85%
>
> # X ~ Binomial(n=50, p=0.85)
>
> # (ii) Probability that at least 47 students pass
> prob_atleast47 <- sum(dbinom(47:50, size = n, prob = p))
> prob_atleast47
[1] 0.04604658
>
> # Parameters
> lambda <- 12
>
> # (i) Random variable: X = number of calls in an hour
> # (ii) Distribution: X ~ Poisson(lambda=12)
>
> # (iii) Probability of exactly 15 calls
> prob_15 <- dpois(15, lambda)
> prob_15
[1] 0.07239112
>

```