

IT2120 - Probability and Statistics

Lab Sheet 06

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01:

```
1 setwd("D:\\SLIIT\\Y2S1\\PS\\LabSheets done by me\\IT24103283_LS_06")
2
3 #Question 01
4 #i
5
6 #Its a Binomial distribution
7
8 #ii
9 n <- 50;
10 p <- 0.85;
11
12 #( P(X ≥ 47) = 1 - P(X ≤ 46))
13 prob_at_least_47 <- sum(dbinom(47:50, size = n, prob = p))
14 print(paste("P(X ≥ 47):", prob_at_least_47))
15
```

14:46 (Top Level) ↕

```
> #Question 01
> #i
>
> #Its a Binomial distribution
>
> #ii
> n <- 50;
> p <- 0.85;
>
> #( P(X ≥ 47) = 1 - P(X ≤ 46))
> prob_at_least_47 <- sum(dbinom(47:50, size = n, prob = p))
> print(paste("P(X ≥ 47):", prob_at_least_47))
[1] "P(X ≥ 47): 0.0460465788923018"
>
```

02:

```
16 #Question 02
17
18 #i
19 # x represents the number of customer calls received in one hour
20
21 #ii
22 # Poisson distribution
23
24 #iii
25 lambda <- 12
26 # P(X = 15)
27 prob_15_calls <- dpois(15, lambda = lambda)
28 print(paste("P(X = 15):", prob_15_calls))
29
```

22:23 (Top Level) ↕

```
> #Question 02
>
> #i
> # x represents the number of customer calls received in one hour
>
> #ii
> # Poisson distribution
>
> #iii
> lambda <- 12
> # P(X = 15)
> prob_15_calls <- dpois(15, lambda = lambda)
> print(paste("P(X = 15):", prob_15_calls))
[1] "P(X = 15): 0.0723911201466387"
>
```