

PS_Lab_6(IT24100139)

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setwd('F:\\sliit\\2nd year\\1 sem\\Probability and Statistics - IT2120\\week 7\\Lab 06-20250903\\lab_6_Answers')

# Exercise 1

# i. Distribution of X:
# Binomial Distribution with parameters n=50n=50 (number of trials) and p=0.85p=0.85 (probability of success).

# ii.
n <- 50
p <- 0.85
prob_at_least_47 <- 1 - pbinom(46, n, p)
print(prob_at_least_47)
```

```
Console Terminal Background Jobs
R 4.5.1 · F:/sliit/2nd year/1 sem/Probability and Statistics - IT2120/week 7/Lab 06-20250903/lab_6_Answers/
> setwd('F:\\sliit\\2nd year\\1 sem\\Probability and Statistics - IT2120\\week 7\\Lab 06-20250903\\lab_6_Answers')
> # Exercise 1
>
> # i. Distribution of X:
> # Binomial Distribution with parameters n=50n=50 (number of trials) and p=0.85p=0.85 (probability of success).
>
> # ii.
> n <- 50
> p <- 0.85
> prob_at_least_47 <- 1 - pbinom(46, n, p)
> print(prob_at_least_47)
[1] 0.04604658
```

#Exercise 2:

```
#i.
# Number of customer calls received in an hour.
```

```
# ii.
# Poisson Distribution with parameter  $\lambda=12$ 
#  $X \sim \text{Poisson}(\lambda=12)$ 
```

```
# iii.
# compute  $P(X=15)$ :
```

```
prob_exactly_15 <- dpois(15, 12)
print(prob_exactly_15)
```

```
> #Exercise 2:
>
> #i.
> # Number of customer calls received in an hour.
>
> # ii.
> # Poisson Distribution with parameter  $\lambda=12$ 
> #  $X \sim \text{Poisson}(\lambda=12)$ 
>
> # iii.
> # compute  $P(X=15)$ :
>
> prob_exactly_15 <- dpois(15, 12)
> print(prob_exactly_15)
[1] 0.07239112
```