Sri Lanka Institute of Information Technology

Lab Submission 07

IT24100486

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B.Sc. (Hons) in Information Technology

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Source on Save                                                    Run
getwd()
setwd("D:\SLIIT\Y2S1\Probabilty & Statistics\Labs\Lab 7\IT24100486")
```

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4
5  # Exercise 1:
6  # Random variable X: minutes the train arrives after 8:00 a.m.
7  # Parameters: min = 0, max = 40
8  punif(25, min = 0, max = 40, lower.tail = TRUE) - punif(10, min = 0, max = 40, lower.tail = TRUE)
9
```

```
>
> # Exercise 1:
> # Random variable X: minutes the train arrives after 8:00 a.m.
> # Parameters: min = 0, max = 40
> punif(25, min = 0, max = 40, lower.tail = TRUE) - punif(10, min = 0, max = 40, lower.tail = TRUE)
[1] 0.375
>
>
```

```
# Exercise 2:
# Random variable X: time (in hours) to complete a software update
# Rate (λ) = 1/3
# P(X <= 2)
pexp(2, rate = 1/3, lower.tail = TRUE)
```

```
>
> # Exercise 2:
> # Random variable X: time (in hours) to complete a software update
> # Rate (λ) = 1/3
> # P(X <= 2)
> pexp(2, rate = 1/3, lower.tail = TRUE)
[1] 0.4865829
>
>
```

```
17
18 # Exercise 3:
19 # Mean (μ) = 100
20 # Standard deviation (σ) = 15
21 # i. What is the probability that a randomly selected person has an IQ above 130? [5]
22 # P(X > 130)
23 1 - pnorm(q = 130, mean = 100, sd = 15, lower.tail = FALSE)
24
```

```
> # Exercise 3:
> # Mean (μ) = 100
> # Standard deviation (σ) = 15
> # i. What is the probability that a randomly selected person has an IQ above 130? [5]
> # P(X > 130)
> 1 - pnorm(q = 130, mean = 100, sd = 15, lower.tail = FALSE)
[1] 0.9772499
>
```

```
25
26  # ii. What IQ score represents the 95th percentile?
27  qnorm(p = 0.95, mean = 100, sd = 15, lower.tail = TRUE)
28
29
```

```
>
> # ii. What IQ score represents the 95th percentile?
> qnorm(p = 0.95, mean = 100, sd = 15, lower.tail = TRUE)
[1] 124.6728
>
```