

Sri Lanka Institute of Information Technology



Lab Submission
<Lab 07>

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<IT24103975>

Probability and Staticstics | IT2120

```
IT24103975.R x
```

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```
1 setwd("~/Desktop/IT24103975Lab_07")
2 getwd()
```

```
> setwd("~/Desktop/IT24103975Lab_07")
> getwd()
```

prob_q1	0.375
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```
7 # Q2
8
9 lambda <- 1/3
10 prob_q2 <- pexp(2, rate=lambda)
11 cat("Q2: Probability update takes at most 2 hours =", prob_q2, "\n")
```

```
> lambda <- 1/3
> prob_q2 <- pexp(2, rate=lambda)
> cat("Q2: Probability update takes at most 2 hours =", prob_q2, "\n")
Q2: Probability update takes at most 2 hours = 0.4865829
```

lambda	0.3333333333333333
prob_q1	0.375
prob_q2	0.486582880967408

```
13 # Q3
14
15 mean_iq <- 100
16 sd_iq <- 15
```

```
> mean_iq <- 100
> sd_iq <- 15
```

mean_iq	100
sd_iq	15

```
18 prob_q3_i <- 1 - pnorm(130, mean=mean_iq, sd=sd_iq)
19 cat("Q3(i): Probability IQ > 130 =", prob_q3_i, "\n")
```

```
> prob_q3_i <- 1 - pnorm(130, mean=mean_iq, sd=sd_iq)
> cat("Q3(i): Probability IQ > 130 =", prob_q3_i, "\n")
Q3(i): Probability IQ > 130 = 0.02275013
```

mean_iq	100
prob_q3_i	0.0227501319481792
sd_iq	15

```
21 iq_95 <- qnorm(0.95, mean=mean_iq, sd=sd_iq)
22 cat("Q3(ii): 95th percentile IQ score =", iq_95, "\n")
```

```
> iq_95 <- qnorm(0.95, mean=mean_iq, sd=sd_iq)
> cat("Q3(ii): 95th percentile IQ score =", iq_95, "\n")
Q3(ii): 95th percentile IQ score = 124.6728
```

iq_95	124.672804404272
mean_iq	100
prob_q3_i	0.0227501319481792
sd_iq	15