

Lab Sheet 07

```
1 setwd("C:\\Users\\Gaveesha\\Documents\\SLIIT\\Y02\\Y02-S01\\Probability and Statistics\\LabSheet\\Lab07")
2
3
4 #Exercise
5 #Q1) Uniform distribution
6 prob_q1 <- (25 - 10) / 40
7 prob_q1
8
9 #Q2 Exponential distribution
10 lambda <- 1/3
11 prob_q2 <- pexp(2, rate=lambda) # P(X ≤ 2)
12 prob_q2
13
14 #Q3 i) Normal distribution - P(X > 130)
15 prob_q3_i <- 1 - pnorm(130, mean=100, sd=15)
16 prob_q3_i
17
18 #Q3 ii) Normal distribution - 95th percentile
19 q3_ii <- qnorm(0.95, mean=100, sd=15)
20 q3_ii
21
```

```
> prob_q1 <- (25 - 10) / 40
> prob_q1
[1] 0.375
> #Q2 Exponential distribution
> lambda <- 1/3
> prob_q2 <- pexp(2, rate=lambda) # P(X ≤ 2)
> prob_q2
[1] 0.4865829
> #Q3 i) Normal distribution - P(X > 130)
> prob_q3_i <- 1 - pnorm(130, mean=100, sd=15)
> prob_q3_i
[1] 0.02275013
> #Q3 ii) Normal distribution - 95th percentile
> q3_ii <- qnorm(0.95, mean=100, sd=15)
> q3_ii
[1] 124.6728
>
```