Faculty of Computing

Year 2 Semester 1 (2025)

IT2120 - Probability and Statistics Lab sheet 09

Exercise 9

Q1)

i)

```
> setwd("C:\\Users\\Victus\\OneDrive\\Desktop\\IT24102426")
>
> #Exercise
>
> #Q1
> #i
> # Generate 25 random baking times
> set.seed(123)  # for reproducibility
> x <- rnorm(25, mean = 45, sd = 2)
> x
 [1] 43.87905 44.53965 48.11742 45.14102 45.25858 48.43013 45.92183 42.46988 43.62629 44.10868
[11] 47.44816 45.71963 45.80154 45.22137 43.88832 48.57383 45.99570 41.06677 46.40271 44.05442
[21] 42.86435 44.56405 42.94799 43.54222 43.74992
```

ii)

```
> #ii
> # Hypothesis test: H0: mu = 46 vs H1: mu < 46
> t.test(x, mu = 46, alternative = "less")

        One Sample t-test

data:  x
t = -2.8167, df = 24, p-value = 0.004776
alternative hypothesis: true mean is less than 46
95 percent confidence interval:
     -Inf 45.58124
sample estimates:
mean of x
 44.93334
```