IT24102390

Labsheet 09

Example

(01)

```
setwd("C:\\Users\\DELL\\OneDrive - Sri Lanka Institute of Information Technology\\Desktop\\IT24102390")

## (01)
x <- c(3, 7, 11, 0, 7, 0, 4, 5, 6, 2)
t.test(x, mu = 3)
```

```
> setwd("C:\\Users\\DELL\\OneDrive - Sri Lanka Institute of Information Technology\\Desktop\\IT24102390")
> ## (01)
> x <- c(3, 7, 11, 0, 7, 0, 4, 5, 6, 2)
> t.test(x, mu = 3)

        One Sample t-test

data:  x
t = 1.3789, df = 9, p-value = 0.2012
alternative hypothesis: true mean is not equal to 3
95 percent confidence interval:
 2.0392 6.9608
sample estimates:
mean of x
      4.5
```

(02)

1.

```
## (02)
# (i)
Weight <- c(17.6, 20.6, 22.2, 15.3, 20.9, 21.0, 18.9, 18.9, 18.9, 18.2)
t.test(Weight, mu = 25, alternative = "less")
```

```
> ## (02)
> # (i)
> Weight <- c(17.6, 20.6, 22.2, 15.3, 20.9, 21.0, 18.9, 18.9, 18.9, 18.2)
> t.test(Weight, mu = 25, alternative = "less")

        One Sample t-test

data:  Weight
t = -9.0783, df = 9, p-value = 3.977e-06
alternative hypothesis: true mean is less than 25
95 percent confidence interval:
     -Inf 20.41105
sample estimates:
mean of x
    19.25
```

2.

```
# (ii)
res <- t.test(Weight, mu = 25, alternative = "less")
res$statistic
res$p.value
res$conf.int
```

```
> # (ii)
> res <- t.test(Weight, mu = 25, alternative = "less")
> res$statistic
        t
-9.078319
> res$p.value
[1] 3.976692e-06
> res$conf.int
[1]     -Inf 20.41105
attr(,"conf.level")
[1] 0.95
```

(03)

1.

```
## (03)
# (i)
y <- rnorm(30, mean = 9.8, sd = 0.05)
y
```

```
> ## (03)
> # (i)
> y <- rnorm(30, mean = 9.8, sd = 0.05)
> y
 [1] 9.715665 9.841889 9.807669 9.743093 9.862691 9.821323 9.785246 9.844756 9.843907 9.841079 9.834432 9.827696
[13] 9.796904 9.784702 9.780976 9.765265 9.789604 9.736730 9.908448 9.860398 9.743845 9.779856 9.776667 9.838998
[25] 9.795832 9.812666 9.798573 9.797856 9.868430 9.788711
```

2.

```
# (ii)
t.test(y, mu = 10, alternative = "greater")
```

```
> # (ii)
> t.test(y, mu = 10, alternative = "greater")

        One Sample t-test

data:  y
t = -24.333, df = 29, p-value = 1
alternative hypothesis: true mean is greater than 10
95 percent confidence interval:
 9.792949      Inf
sample estimates:
mean of x
 9.806464
```