STAT 3232

Quiz 04

212137

1.

Hypothesis

H0: $\mu = 25$

H1: $\mu \neq 25$

```
> Weight<-c(17.6,20.6,22.2,15.3,20.9,21,18.9,18.9,18.9,18.2)
> Weight
 [1] 17.6 20.6 22.2 15.3 20.9 21.0 18.9 18.9 18.9 18.2
> t.test(Weight, alternative ="two.sided",mu=25)

        One Sample t-test

data:  Weight
t = -9.0783, df = 9, p-value = 7.953e-06
alternative hypothesis: true mean is not equal to 25
95 percent confidence interval:
 17.8172 20.6828
sample estimates:
mean of x
    19.25
```

Since p-value is less than 0.05, H0 is rejected at th 5% level of significance level. Therefore, we can conclude that the average weight of the mice differs from 25g.

2.

Hypothesis

H0: $\mu B \le \mu G$

H1: $\mu B > \mu G$

```
> Boy<-c(56,65,47,46,60,56,45,39,50,45,39,42,42,33,47,57,45,50,45,42)
> Girl<-c(56,65,37,47,60,46,35,41,40,45,34,42,42,43,37,47,45,50,45,42)
> t.test(Boy,Girl,alternative="greater",var=T)

	Two Sample t-test

data:  Boy and Girl
t = 1.0381, df = 38, p-value = 0.1529
alternative hypothesis: true difference in means is greater than 0
95 percent confidence interval:
 -1.622776       Inf
sample estimates:
mean of x mean of y 
    47.55     44.95 
```

Since the p-value is greater 0.05 H0 do not rejected. Therefore, we don’t have enough evidence to say that the mean body weight of boys is greater than that of girls.