ACADGILD ASSIGNMENT 9.2

1.Calculate the p-value for the test in Problem no 2.

ANSWER:

```
 t.test(mtcars$am, mu=10, conf.level=0.99)
t.test(mpg ~ am, data=mtcars)
```

Output from R-console

```
> t.test(mtcars$am, mu=10, conf.level=0.99)
One Sample t-test
data: mtcars$am
t = -108.76, df = 31, p-value < 2.2e-16
alternative hypothesis: true mean is not equal to 10
99 percent confidence interval:
0.1641982 0.6483018
sample estimates:
mean of x
0.40625
> t.test(mpg ~ am, data=mtcars)
Welch Two Sample t-test
data: mpg by am
t = -3.7671, df = 18.332, p-value = 0.001374
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
-11.280194 -3.209684
sample estimates:
mean in group 0 mean in group 1
17.14737 24.39231
```

2. How do you test the proportions and compare against hypothetical props? Test hypothesis: proportion of automatic cars is 40%

ANSWER:

```
prop.test(table(mtcars$am)[2],nrow(mtcars),p=0.4,alternative = "less",conf.level =
0.99,correct = FALSE)
prop.test(table(mtcars$mpg)[2],nrow(mtcars),p=0.4,alternative = "less",conf.level =
0.99,correct = FALSE)
prop.test(table(mtcars$cyl)[2],nrow(mtcars),p=0.4,alternative = "less",conf.level =
0.99,correct = FALSE)
prop.test(table(mtcars$wt)[2],nrow(mtcars),p=0.4,alternative = "less",conf.level =
0.99,correct = FALSE)
```

Output from R-console

```
1-sample proportions test without continuity correction
```

```
data: table(mtcars$wt)[2] out of nrow(mtcars), null probability 0.4
X-squared = 18.13, df = 1, p-value = 1.032e-05
alternative hypothesis: true p is less than 0.4
99 percent confidence interval:
0.000000 0.193806
sample estimates:
p
0.03125
> prop.test(table(mtcars$am)[2],nrow(mtcars),p=0.4,altern ative = "less",conf.level =
0.99,correct = FALSE)
1-sample proportions test without continuity correction
data: table(mtcars$am)[2] out of nrow(mtcars), null probability 0.4
X-squared = 0.0052083, df = 1, p-value = 0.5288
alternative hypothesis: true p is less than 0.4
99 percent confidence interval:
0.0000000 0.6070996
sample estimates:
p
0.40625
> prop.test(table(mtcars$mpg)[2],nrow(mtcars),p=0.4,alter native = "less",conf.level =
0.99,correct = FALSE)
1-sample proportions test without continuity correction
data: table(mtcars$mpg)[2] out of nrow(mtcars), null probability 0.4
X-squared = 18.13, df = 1, p-value = 1.032e-05
alternative hypothesis: true p is less than 0.4
99 percent confidence interval:
0.000000 0.193806
sample estimates:
p
0.03125
```