Statistics for Engineers

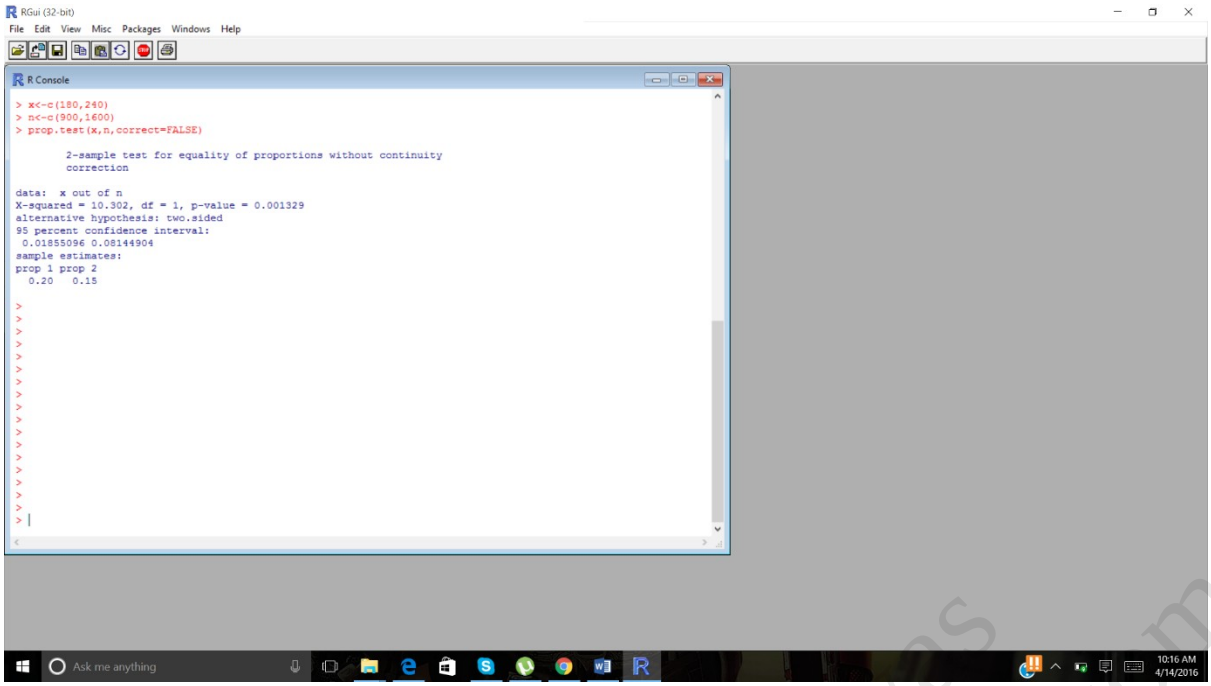
Experiment 7

1. In the large city A,20 per cent of Random sample of 900 School children had defective eye –sight. In the large city B,15 percent of random sample of 1600 school children had the same defective. Is this Difference between the two Proportions Significant? Obtain 95% confidence limits of the difference in the population proportions.pro

```
> x<-c(180,240)
> n<-c(900,1600)

> prop.test(x,n,correct=FALSE)

        2-sample test for equality of proportions without continuity
        correction

data:  x out of n
X-squared = 10.302, df = 1, p-value = 0.001329
alternative hypothesis: two.sided
95 percent confidence interval:
 0.01855096 0.08144904
sample estimates:
prop 1 prop 2
  0.20   0.15
```

Here there is signigficance as “P” value is less than 0.05

The confidence limits are 1.855% to 8.14%.



2. A cigarette manufacturing firm claims its brand A of the cigarettes outsells its brand B by 8%.if its found that 42 out sample of 200 smoker prefer brand A and 18 out of another random sample of 100 smokers prefers brand B, test whether the 8% difference is a valid claim.

```
> x<-c(42,18)
> n<-c(200,100)
> prop.test(x,n,alternative="greater",correct=FALSE)

        2-sample test for equality of proportions without continuity
        correction

data:  x out of n
X-squared = 0.375, df = 1, p-value = 0.2701
alternative hypothesis: greater
95 percent confidence interval:
 -0.04897867  1.00000000
```

sample estimates:

prop 1 prop 2

0.21 0.18

Here the P value is greater than alpha L.O.S value.

Hence accept the null hypothesis.