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# ASSESSMENT – 8

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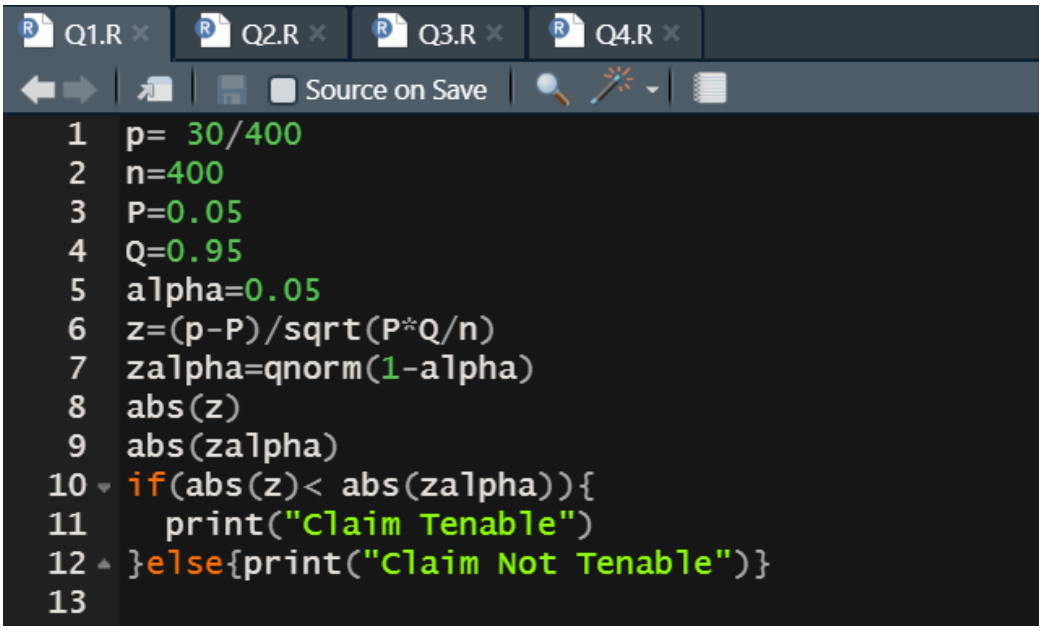
## LARGE SAMPLE TEST

## Syntax:

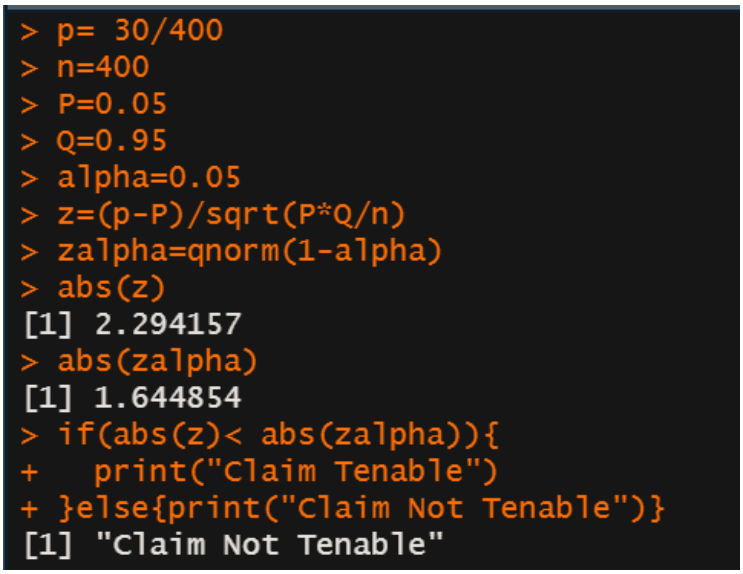
- **qnorm:** The function qnorm() aims to find the boundary value, A in P(X < A) , given the probability P.
- **abs:** computes the absolute value of numeric data.
- **sqrt:** The R sqrt method is one of the R Math functions, which is useful to find the square root in R for an individual number or an expression.
- **print:** Using print() function to print output is the most common method in R.

1.In a sample of 400 parts manufactured by a factory, the number of defective parts was found to be 30. The company, however, claimed that only 5% of their product is defective. Is the claim tenable?

**Code:**




**Output:**



2. Random samples of 400 men and 600 women were asked whether they would like to have a flyover near their residence. 200 men and 325 women were in favor of the proposal. Test the hypothesis that proportions of men and women in favor of the proposal are same, at 5% level.

**Code:**

Q1.R | Q2.R | Q3.R | Q4.R

Source on Save

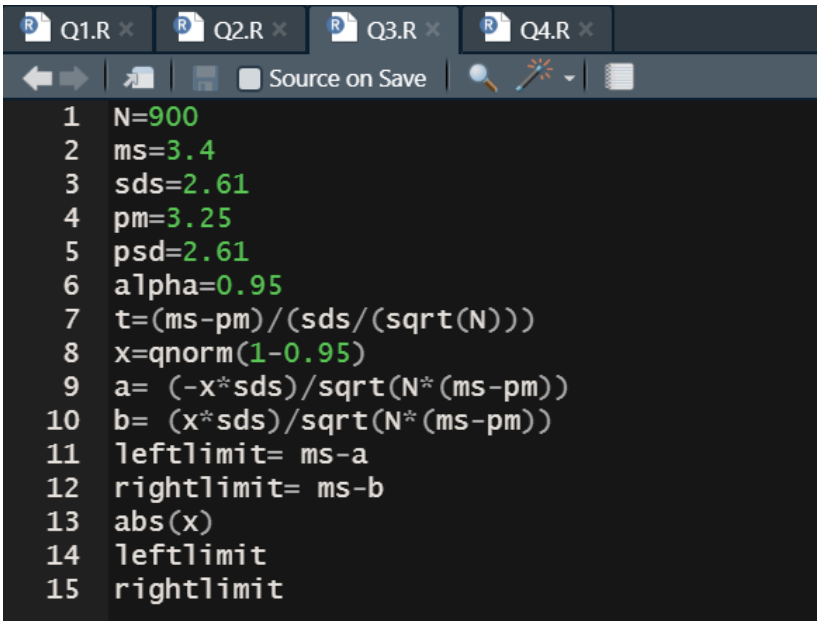
```
p1=200/400
X1=200
n1=400
p2=325/600
X2=325
n2=600
a= (n1*p1)+(n2*p2)
b=n1+n2
P=a/b
Q=1-P
alpha=0.05
z=(p1-p2)/sqrt(P*Q*(1/n1+1/n2))
zhalfalpha=qnorm(1-(alpha/2))
abs(z)
abs(zhalfalpha)
if(abs(z)< abs(zhalfalpha))
{print("Null hypothesis accepted!")
}else
{print("Null hypothesis rejected!")}

```

**Output:**

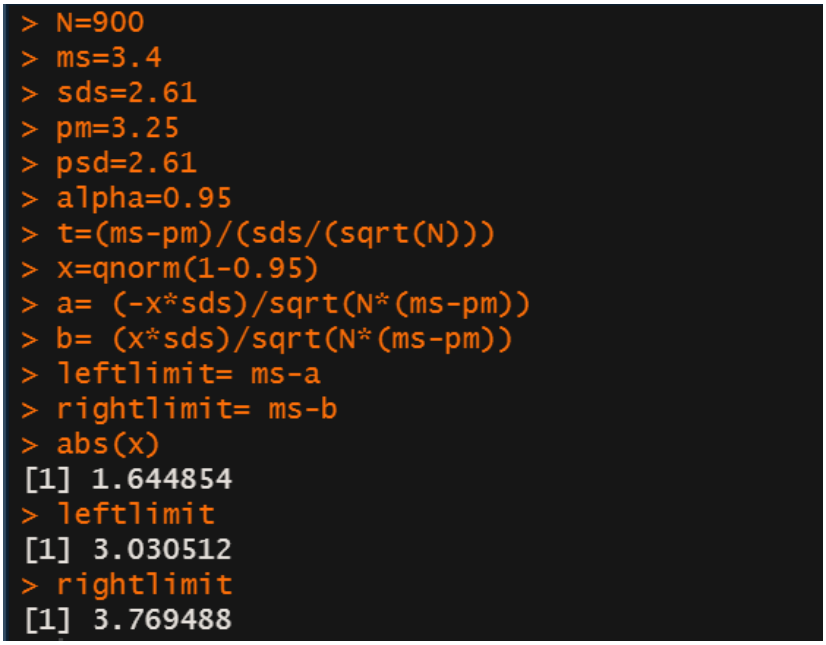
```
> p1=200/400
> X1=200
> n1=400
> p2=325/600
> X2=325
> n2=600
> a= (n1*p1)+(n2*p2)
> b=n1+n2
> P=a/b
> Q=1-P
> alpha=0.05
> z=(p1-p2)/sqrt(P*Q*(1/n1+1/n2))
> zhalfalpha=qnorm(1-(alpha/2))
> abs(z)
[1] 1.292611
> abs(zhalfalpha)
[1] 1.959964
> if(abs(z)< abs(zhalfalpha))
+ {print("Null hypothesis accepted!")
+ }else
+ {print("Null hypothesis rejected!")}
[1] "Null hypothesis accepted!"
```

3.A sample of 900 members has a mean of 3.4 cms and S.D 2.61 cms. Is the sample from a large population of mean 3.25 cm and S.D 2.61 cms. If the population is normal and its mean is unknown find the 95% fiducial limits of true mean.

**Code:**

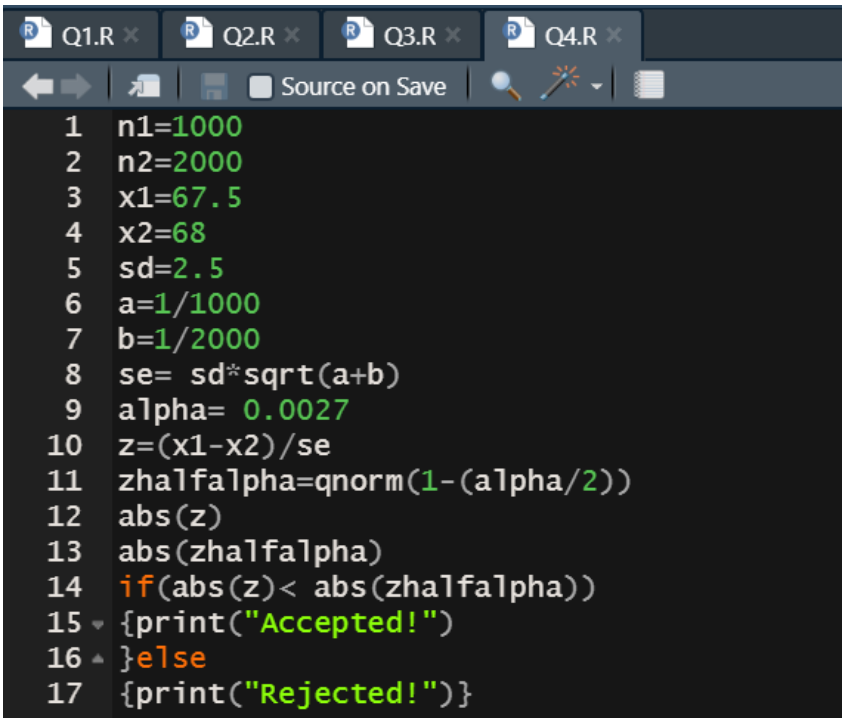



**Output:**



4.The means of 2 large samples 1000 and 2000 members are 67.5 inches and 68 inches respectively. Can the samples regarded as drawn from the same population of S.D 2.5 inches.

**Code:**




**Output:**