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*Batch: A4*
*Date: 01/04/2021*
*Practical Name: Sampling*
*Q26,Q29*

Q. 26 )

| | Mean | S.D | No |
|---|---|---|---|
| Girls | 84 | 10 | 121 |
| Boys | 81 | 12 | 81 |

Intelligence tests of two groups of boys & girls obtained from two normal populations having the same standard deviations gave the following results. Is the difference between the means significant

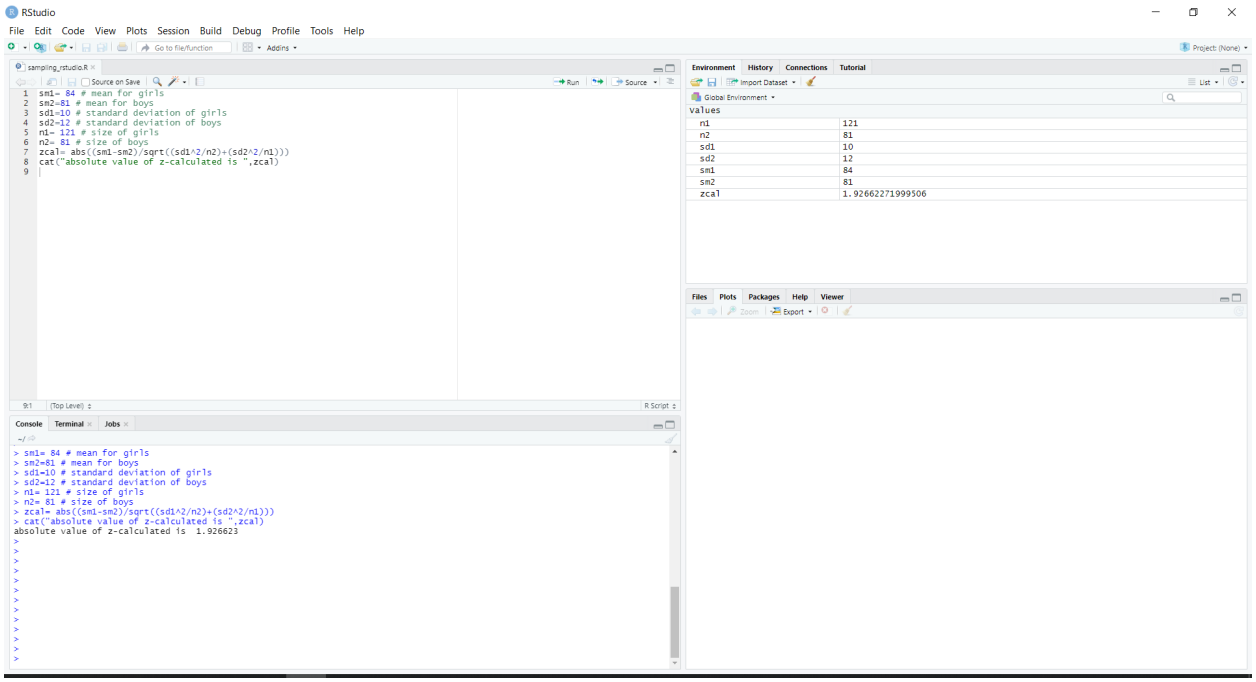
Code:

```
sm1= 84 # mean for girls
sm2=81 # mean for boys
sd1=10 # standard deviation of girls
sd2=12 # standard deviation of boys
n1= 121 # size of girls
n2= 81 # size of boys
zcal= abs((sm1-sm2)/sqrt((sd1^2/n2)+(sd2^2/n1)))
cat("absolute value of z-calculated is ",zcal)
```

Output :

```
> sm1= 84 # mean for girls
> sm2=81 # mean for boys
> sd1=10 # standard deviation of girls
> sd2=12 # standard deviation of boys
> n1= 121 # size of girls
> n2= 81 # size of boys
> zcal= abs((sm1-sm2)/sqrt((sd1^2/n2)+(sd2^2/n1)))
> cat("absolute value of z-calculated is ",zcal)
absolute value of z-calculated is  1.926623
>
```

R-Studio Screenshot:



Answer:

|z|=1.926623

Table value of z=1.341

|z|>Table value of z

No, the difference is not significant between the two means.

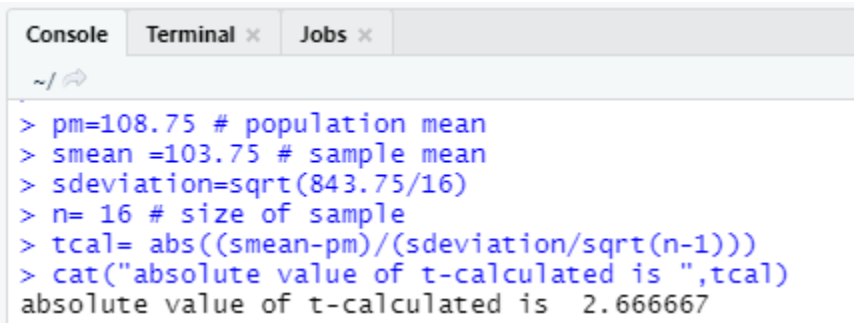
Q. 29)

A random sample of size 16 from a normal population showed a mean of 103.75 cm & sum of squares of deviations from the mean 843.75 cm2. Can we say that the population has a mean of 108.75?

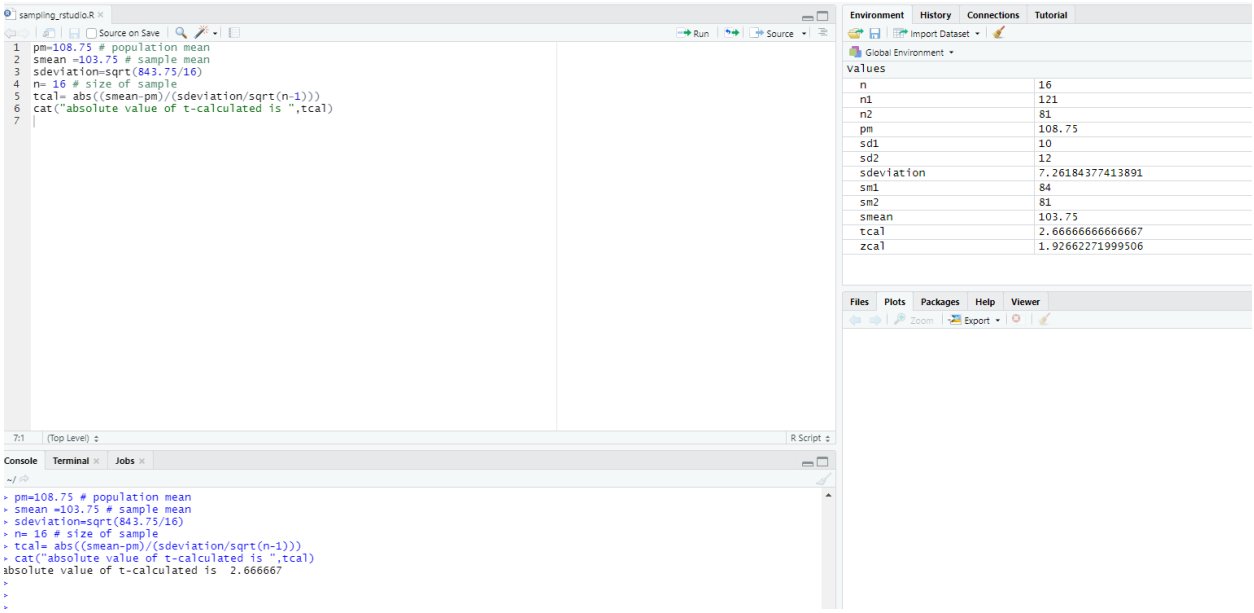
Code:

```
pm=108.75 # population mean
smean =103.75 # sample mean
sdeviation=sqrt(843.75/16)
n= 16 # size of sample
tcal= abs((smean-pm)/(sdeviation/sqrt(n-1)))
cat("absolute value of t-calculated is ",tcal)
```

Output:



## R-Studio Screenshot:




## Answer:

|t|=2.6667

Table value of t=2.131

|t|> Table value of t

Hence, null hypothesis is rejected.

Hence, we cannot say the population mean is 108.75