



# *MATHEMATICAL PROCESSING ABILITIES BETWEEN MALES AND FEMALES*

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# *HYPOTHESIS*

This group's main motive was to prove that the mathematical processing of males was equal to that of the females.

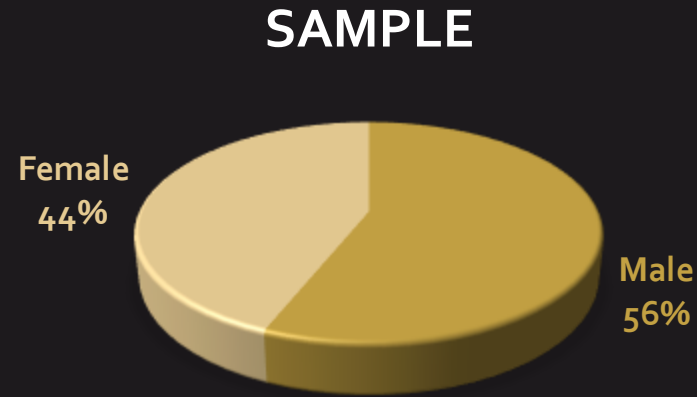
How did we try to find the answer for the above hypothesis?

We conducted a survey in and around our college physically by asking people a basic but tricky maths question. The question was to calculate simple math series  $1+1=2, 2+2=4, 4+4=8, 8+8=16$  and so on.

We had two criterias, for the question one was the the answer must be right and the answers must not have a gap of more than 5 seconds. The stages are as shown on the right.

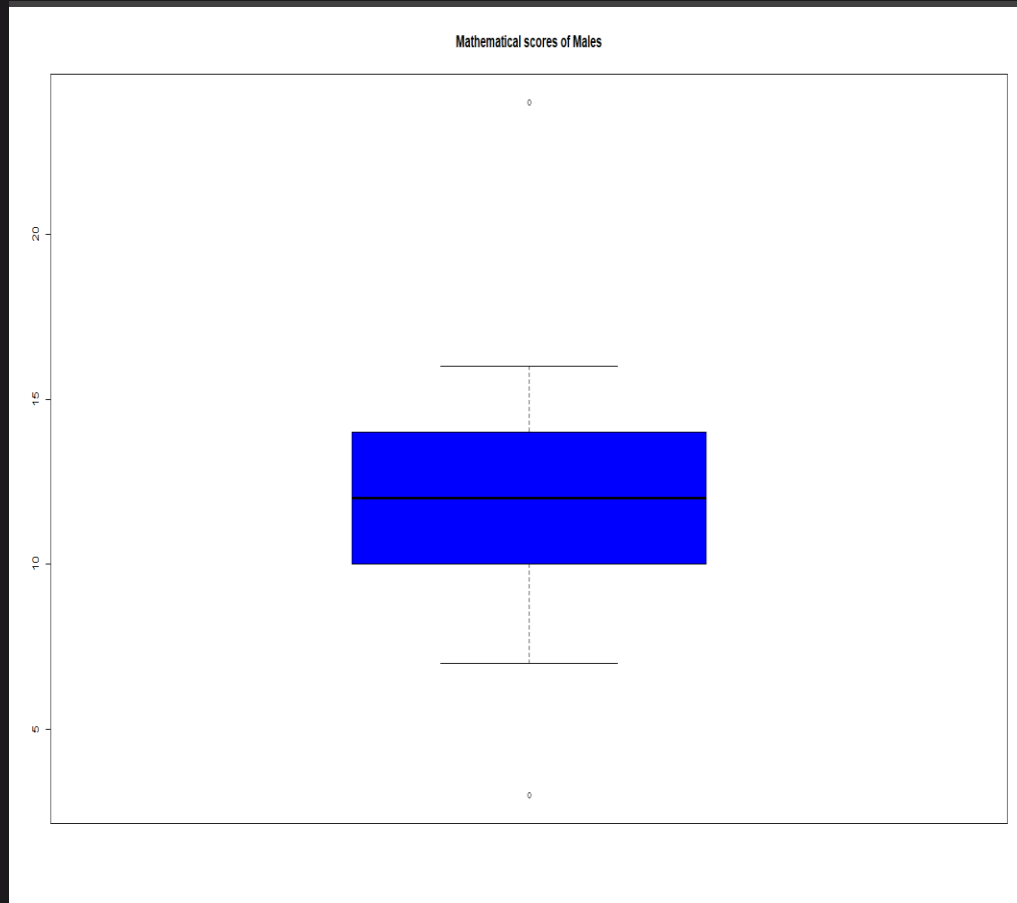
STAGE 1:- 1  
STAGE 2:- 2  
STAGE 3:- 4  
STAGE 4:- 8  
STAGE 5:- 16  
STAGE 6:- 32  
STAGE 7:- 64  
STAGE 8:- 128  
STAGE 9:- 256  
STAGE 10:- 512  
STAGE 11:- 1024  
STAGE 12:- 2048  
STAGE 13:- 4096  
STAGE 14:- 8192  
STAGE 15:- 16384  
STAGE 16:- 32768  
STAGE 17:- 65536  
STAGE 18:- 131072  
STAGE 19:- 262144  
STAGE 20:- 524288  
STAGE 21:- 1048576  
STAGE 22:- 2097152  
STAGE 23:- 4194304  
STAGE 24:- 8388608

# *OUR SAMPLE*

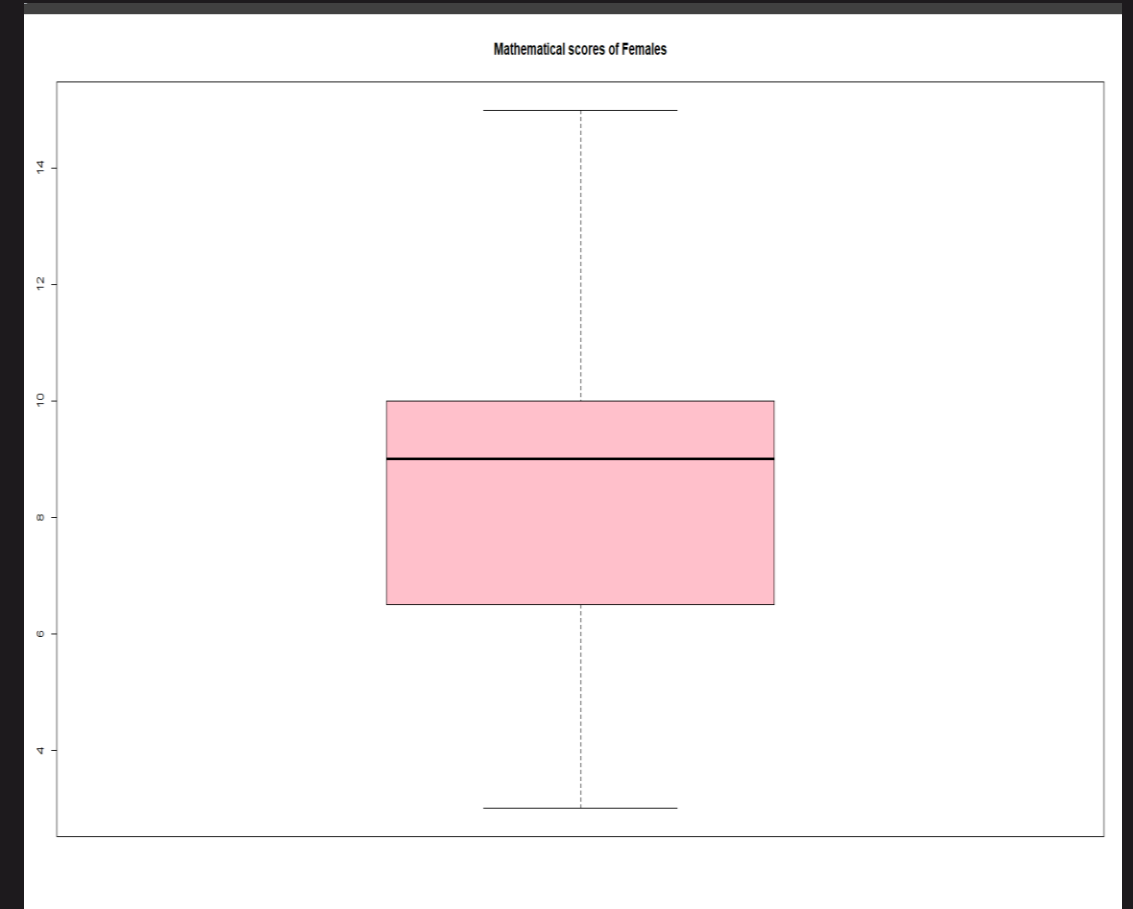


We went and asked this question to people and we got a total of 73 responses. As you can see in the above pie chart, our total sample is of 73 people out of which 41 are males and 32 are females giving them 56% and 44% respectively.

# *ANALYSIS THROUGH GRAPHS*

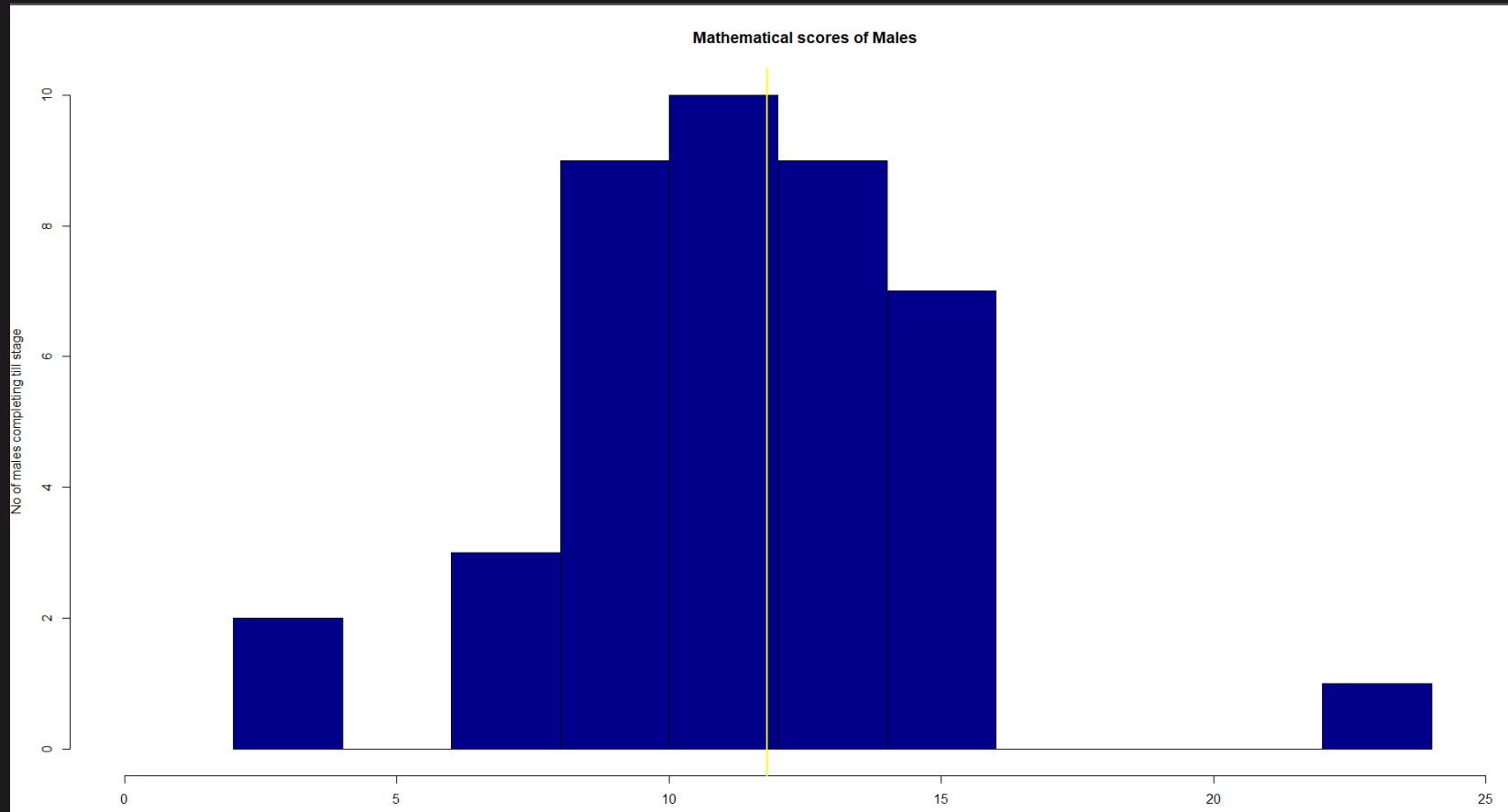


BOX PLOT OF MATHEMATICAL SCORES OF  
MALE



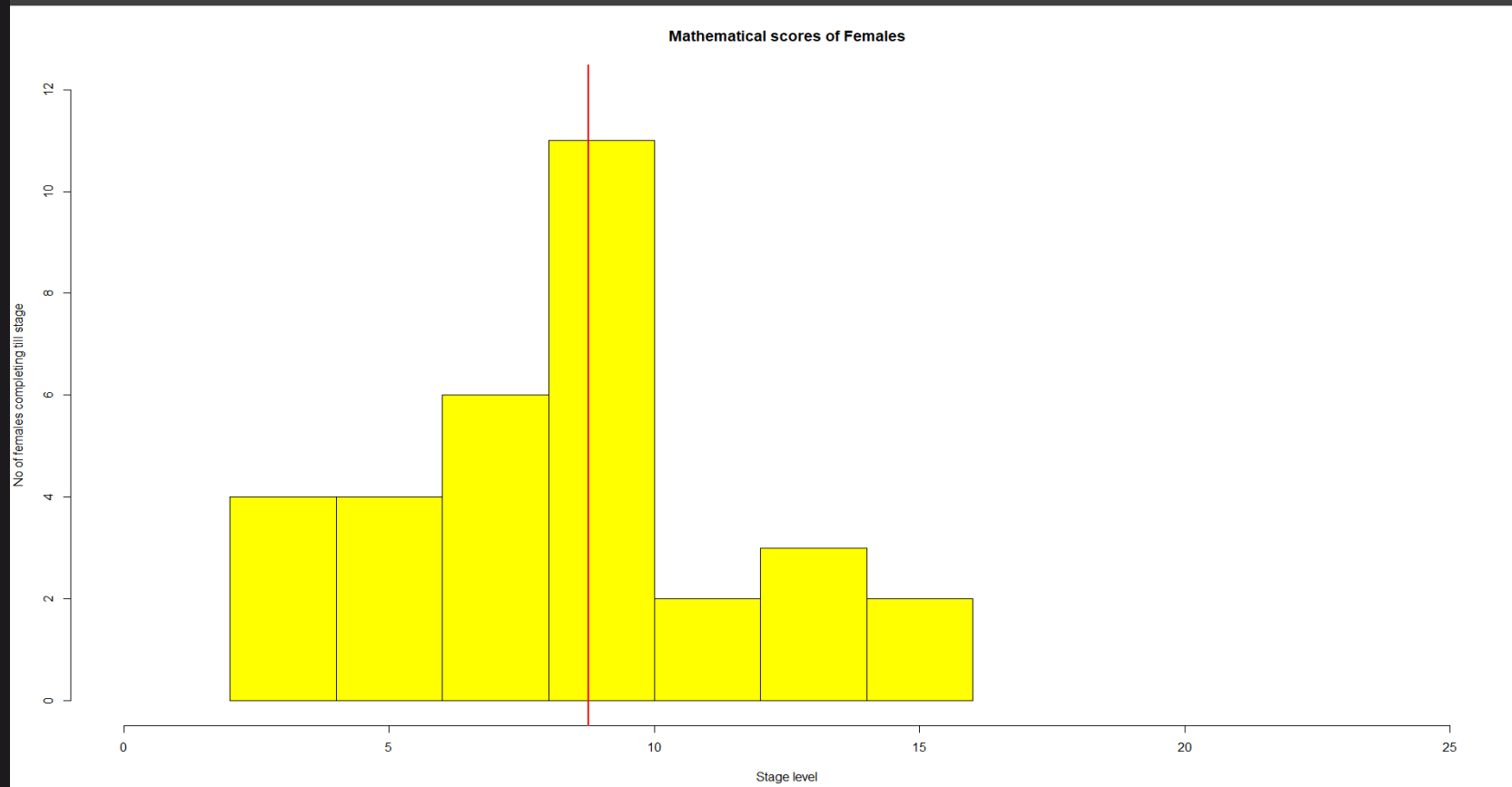
BOX PLOT OF MATHEMATICAL SCORES OF  
FEMALE

# *ANALYSIS THROUGH GRAPHS*



HISTOGRAM DEPICTING HOW MANY MALES REACHED WHICH STAGE  
(THE YELLOW LINE DEPICTS MEAN)

# *ANALYSIS THROUGH GRAPHS*



HISTOGRAM DEPICTING HOW MANY FEMALES REACHED WHICH STAGE  
(THE RED LINE DEPICTS MEAN)

# T-TEST ANALYSIS

```
data:  a$Mathematical.Score and a$Mathematical.Score.1
t = 3.7902, df = 69.642, p-value = 0.0003168
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 1.447226 4.662530
sample estimates:
mean of x mean of y
11.80488   8.75000
```

t-Test: Two-Sample Assuming Unequal Variances		
	Variable 1	Variable 2
Mean	11.80487805	8.75
Variance	13.16097561	10.51612903
Observations	41	32
Hypothesized Mean Difference	0	
df	70	
t Stat	3.790193338	
P(T<=t) one-tail	0.000157844	
t Critical one-tail	1.666914479	
P(T<=t) two-tail	0.000315688	
t Critical two-tail	1.994437112	

We have used two sample t test for our hypothesis because we don't have the population standard deviation and a relatively small dataset. From the above calculated results, it is evident that the null hypothesis has been rejected due to the p-value being less than 0.05 considering alpha as 0.05.

# SUMMARY

As we can see from the above analysis, the minimum stage for males and females we got was both stage 3 but it also shows that only 2 males finished till that stage as compared to females which had 4 reaching the minimum stage which was seen. The median stage of males is also clearly higher than that of females which was stage 12 with and stage 9 respectively. Regarding to outliers, there were no outliers observed in females scores whereas there was one positive outlier and one negative outlier in male scores. When the maximum scores are also being compared, the male highest stage is 24 which is way more than the 15 scored by females.

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
3.0	10.0	12.0	11.8	14.0	24.0

## SUMMARY OF MALE MATHEMATICAL SCORES

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
3.00	6.75	9.00	8.75	10.00	15.00

## SUMMARY OF FEMALE MATHEMATICAL SCORES