UniLaSalle Terre & Sciences	UE		**UE CODE**	TU3.4
	Topic		**Teacher**	**Alex. Gazagnes**
Course evaluation	Practical Tests (R Software) ISAFE -2024	Exam	*	
Time		**Date**	**Avr 2024**	

Calculator	*Forbidden*		*Documents*	*Forbidden*	
	Allowed, but a basic one	*		*Allowed*	*
	Allowed			*Which documents? Lectures, notes and laptops*	

LAST NAME: ……FIRST NAME: ……TABLE:

The codes will be written in italics in the questions.

Exercise 1 (4 points)

1) **Check if the line of code below is compiled in R. Correct if there is an error.**

a=10 ; if (a%%2=0) print(a)

Is the line of code correct?

☐ Yes ;
☐ No.

Correct the line of code if you answered No.

2) **Write an R expression that will return the sum equal to 10 for the vector *x = c(2, 1, 4, 2, 1, NA).***

3) **Check if the line of code below is compiled in R. Correct if there is an error.**

hist(rnorm(10000,1,1), col=("purple","dark blue","blue","light blue","yellow","orange","red"), main=" The most beautiful of graphics",breaks=seq(-7,7,0.1))

Is the command correct?

☐ Yes ;
☐ No.

Correct the line of code if you answered No.

4) Check if the line of code below is compiled in R. Correct if there is an error.

t.test(c(11,9,8,10,7,13,11),c(36.4,36.8,37.4,37.8,37.1,36.6,36.2))

Is the command correct?

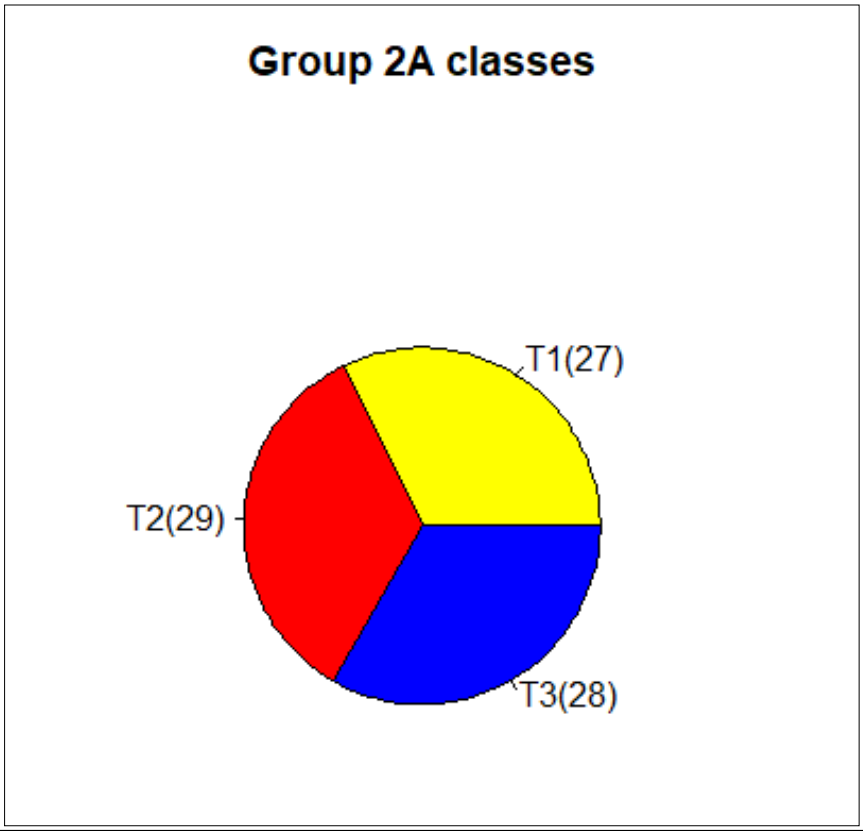
☐ Yes ;
☐ No.

Correct the line of code if you answered No.

Exercise 2 (6 points)

Indicate in the boxes below the R codes to obtain the follow results / graphs.

1)

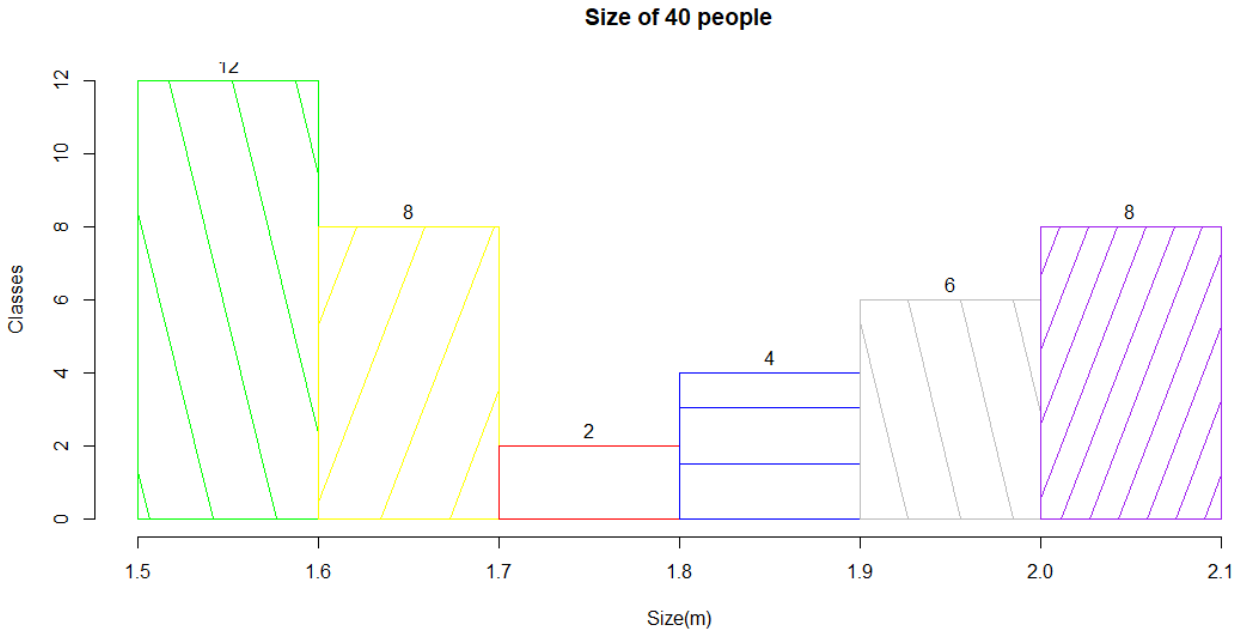


2)

One Sample t-test

data: c(53, 32, 55, 20, 29, 18, 14, 2, 11, 6)
t = 2.4168, df = 9, p-value = 0.03881
alternative hypothesis: true mean is not equal to 10
99 percent confidence interval:
5.174627 42.825373
sample estimates:
mean of x
24

3) Create a histogram with hatch. The densities of the hatched of the histogram must appear in the correct class!



Exercise 3 (10 points)

Sex	Group	Weight
F	T1	80
F	T1	70
F	T1	75
M	T1	73
F	T1	80
M	T1	80
M	T1	60
F	T1	70
M	T1	70
M	T1	82

1) Indicate a command to save the table above in an object of type data.frame. Name it *Data*.

2) Indicate a command to give all the information of the 4th individual of the data object.

3) Indicate a command to calculate the average weight. Indicate the result.

Command:
Result:

4) Enter the command to verify if “Group” is a numeric variable or not.

5) Indicate a command to calculate the variance of the “Weight” and indicate the result.

Command:
Result:

6) Specify a command to return all weight estimates given for women.

7) Can we consider that the Weight variable of the dataset follows a normal distribution with the risk of % 5? Indicate a command to perform a statistical test under R. Indicate the p-value and the result obtained in R (corrected hypothesis).

Command:
p-value :
Corrected hypothesis:

8) Do the groups of women and men have the same estimate of weight at risk of 1%? It is assumed that the variances are equal and that the populations are normal. Indicate one or more commands used to perform the statistical test under R. Indicate the p-value and the correct hypothesis.

Command:

p-value :
Corrected hypothesis:

9) Enter a command in R that results in the information to complete the table below:

	Women	Men
Frequency		
