Name: _____

Identification number : _____

Exercise 1. We want to study if being employed (a_1) or unemployed (a_1) implies different results in the level of depression. Groups were considered independent. Parametrical assumptions were not accepted.

	Level of depression						
Employed	3.8	2.1	0.8	2.6	1.3		$n_1=5$
Unemployed	3.2	4.5	5.2	2.9	7.1	6.8	$n_1=6$

Are there differences in the level of depression between employed and unemployed people? ($\alpha = 0.05$). 2.5 points.

Exercise 2. We have a random sample of 12 people, randomly distributed into three groups of 4 subjects each. We want to analyze the effect of three different gym methods (A, B, C) on physical endurance. The results are the following:

Method				
A	6	5	8	4
B	8	9	4	5
C	11	7	9	8

We know that the "within-group" sum of squares is 34,5.

Are there differences between gym methods? If it is possible, can you specify between which concrete groups, using HSD Tukey? ($\alpha= 0.05$). 2 points.

Exercise 3. In a particular research on the topic of child and adolescent obesity in Spain we have studied a sample of 150 boys and girls with obesity. Among other variables we have considered the following: Age (0=until 9 years old, 1=from 10 to 18 years old), Sex (0=girl, 1=boy), Academic performance and Bulling. Using Bulling as the variable to be explained and the others as predictors, we obtain the following information after a multiple regression analysis:

Coefficients [a]

Model		Non standardized coefficients		Standardized coefficients		
		B	Stand. Error	Beta	t	Sig.
1	(Constant)	11.662	2.584		4.513	.000
	Sex	-5.141	1.451	-.283	-3.545	.001
	Age	4.301	1.466	.233	2.934	.004
	Acad. Perf.	1.041	.358	.222	2.912	.004

a. Dependent variable: Bulling

a) Specify the regression equation in raw scores and standardized scores. 1 point.
b) Interpret the regression coefficients of the equation in raw scores. Which are significant and why? ($\alpha= 0.05$). 1 point.
c) Calculate the mean score in Bulling (measured in points) of a boy of 13 years old with 4 points in academic performance. 1 point.

Exercise 4. We know the following information:
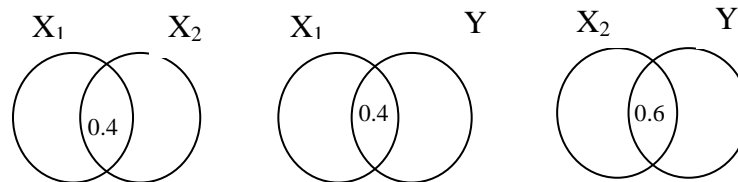
We know that $r_{y.12}= 0,9$. Calculate the proportions of variability represented by the letters a, b, c, d and e in the following diagram: 2.5 points.