

**STATISTICS APPLIED TO BUSINESS  
ADMINISTRATION. ACADEMIC YEAR 2012-2013  
SEMINAR 5 (30 MINUTES)**

Date: \_\_\_\_\_

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**EXERCISE 1 (5 POINTS)**

A given individual wished to buy a specific type of television. In order to find out possible price ranges for it, he visits 31 different internet web pages for stores selling televisions and finds out that the sample average price for a television in those stores is 700 euros, with a sample standard deviation of 60 euros. It is assumed that the price for those specific televisions follows a normal distribution.

1. **(3 Points)** Obtain a 90 % confidence interval for the mean price for that specific television type. At the 10 % confidence level, test the hypothesis that the mean price for this specific type of television is equal to 750 euros.
2. **(2 Points)** Obtain a 90 % confidence interval for the variance of the price for this specific type of television.

**EXERCISE 2 (5 POINTS)**

We wish to estimate the proportion  $p$  of people that can be considered as frequent users of the subway as a means of transportation to go to work. In order to do so, a random sample of 700 individuals is taken, and 400 of them can be considered as frequent users of the subway to go to work.

1. **(2 Points)** Obtain an approximate 95 % confidence interval for the proportion of people that can be considered as frequent users of the subway to go to work.
2. **(3 Points)** At the 5 % significance level, test the hypothesis that the proportion of people that can be considered as frequent users of the subway to go to work is equal to 0.70.

**Remark:** This piece of paper should be handed in together with your solutions to the aforementioned exercises. You should also write, both on this piece of paper and in the solutions you provide, the names of the students in your group that have actively participated in this seminar activity.