

STATISTICS APPLIED TO BUSINESS ADMINISTRATION
ACADEMIC YEAR 2017-2018
PRACTICAL EXERCISE 8 (20 MINUTES)

Date: _____

Complete name: _____ ID number: _____

EXERCISE 1 (4 POINTS)

We wish to estimate the proportion of employees that, out of a total of 20000 employees working for a large firm, spend their holidays in a foreign country. Compute the minimum sample size that is required to estimate this proportion of employees with a 95% confidence and an error that is no larger than 5% if simple random sampling without replacement is used.

EXERCISE 2 (6 POINTS)

In order to estimate the mean alcoholic beverages consumption during the weekends, a stratified three-strata population is considered. That is, the population is divided in three different strata. It is known that the first stratum includes 600 individuals and that its population quasi standard deviation is $\sigma_1^* = 20$, that the second stratum includes 300 and that its population quasi standard deviation is $\sigma_2^* = 30$, and that the third stratum includes 100 individuals and that its population quasi standard deviation is $\sigma_3^* = 10$. We wish to take a sample of 300 individuals.

1. (2 Points) If uniform allocation is used, what would the sample size for each stratum in the population under study be?
2. (2 Points) If proportional allocation is used, what would the sample size for each stratum in the population under study be?
3. (2 Points) If n-optimal allocation is used, what would the sample size for each stratum in the population under study be?