

MASTER 1 IN ECONOMICS
MASTER 1 ECONOMIE ET STATISTIQUE

Statistical Software / code : M1S19

Lundi 24 Juin 2013 ~ amphi MB1
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- durée conseillée pour traiter ce sujet : 1 heure
- **ATTENTION** : le nom de la matière et son code doivent être **IMPERATIVEMENT** recopiés sur la copie d'examen

Documents and course materials forbidden.

Subject

Exercise 1 (4 points)

Let the matrix M:

	[,1]	[,2]	[,3]
[1,]	4	3	1
[2,]	1	-1	3
[3,]	0	2	4

What are the results of the following instructions?

- c) `M[,1]`
- b) `M[-3,]`
- c) `M[c(1,2),-2]`
- d) `apply(M,1,min)`
- e) `apply(M,2,sum)`

Exercise 2 (4 points)

Write a function that takes as argument a vector x and displays the vector as a scatterplot. What correspond to the x-values of these points? Calculate the mean of these points and put it on the graphics.

Exercise 3 (5 points)

Write a function that takes a vector x as argument and compute both

$\sum_i 1/x_i^2$ and the product of the elements of x.

Exercise 4 (7 points)

Write a function that takes as argument a vector x and a value v and that finds the value in x that is just above v (that is the value x[i] which minimizes (x[i]-v)).

Use your function to find, for each line of a matrix M, the positive value that is the closest to 0.