

Examen de Juin 2021

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Calculs élémentaires

```
1+1
```

```
## [1] 2
```

```
23*786
```

```
## [1] 18078
```

```
log(10)
```

```
## [1] 2.302585
```

```
log10(10)
```

```
## [1] 1
```

Les variables

```
x<-2 # Affectation je mets 2 dans la variable x  
x # Je demande d'afficher x
```

```
## [1] 2
```

```
x<-5 # Affectation je mets 5 dans la variable x  
x # Je demande d'afficher x
```

```
## [1] 5
```

```
x^2
```

```
## [1] 25
```

Les listes dans R

```
l1<-c(1,7,89)
l2<-c(12,-7,18)
l1+l2 # somme de deux listes

## [1] 13 0 107
l1*l2 # produit de deux listes

## [1] 12 -49 1602
100+l1

## [1] 101 107 189
100+3*l1

## [1] 103 121 367
l3<-c(2,6,8,9)
sum(1:100) # somme des n premiers entiers

## [1] 5050
100*101/2 # somme des n premiers entiers avec la formule

## [1] 5050
sum((1:100)^2) # somme des n premiers carrés

## [1] 338350
100*101*201/6 # somme des n premiers carrés avec la formule

## [1] 338350
```

Ecrire des formules mathématiques

On peut écrire avec le langage LATEX

$$\sum_{i=1}^n i = 1 + 2 + \cdots + n = \frac{n(n+1)}{2}$$

$$\sum_{i=1}^n i^2 = 1^2 + 2^2 + \cdots + n^2 = \frac{n(n+1)(2n+1)}{6}$$

Installer et appeler un package

```
library("AER")
```

```
## Loading required package: car
```

```
## Loading required package: carData
```

```
## Loading required package: lmtest
```

```
## Loading required package: zoo
```

```
##
## Attaching package: 'zoo'

## The following objects are masked from 'package:base':
##
##      as.Date, as.Date.numeric

## Loading required package: sandwich
## Loading required package: survival
data("Journals",package="AER")

dim(Journals)

## [1] 180 10
```

Renommer des variables

```
names(Journals)[1:5]

## [1] "title"      "publisher" "society"   "price"     "pages"
names(Journals)[names(Journals)=="title"]<-c("Titre")
names(Journals)[8]<-c("Année de création")
names(Journals)

## [1] "Titre"          "publisher"      "society"
## [4] "price"          "pages"          "charpp"
## [7] "citations"      "Année de création" "subs"
## [10] "field"

names(Journals)[names(Journals)=="subs"]<-c("Abonnements")
names(Journals)[c(2,4,10)]<-c("Editeur","Prix","Domaine")
Journals$Titre

## [1] "Asian-Pacific Economic Literature"
## [2] "South African Journal of Economic History"
## [3] "Computational Economics"
## [4] "MOCT-MOST Economic Policy in Transitional Economics"
## [5] "Journal of Socio-Economics"
## [6] "Labour Economics"
## [7] "Environment and Development Economics"
## [8] "Review of Radical Political Economics"
## [9] "Economics of Planning"
## [10] "Metroeconomica"
## [11] "Journal of Consumer Policy"
## [12] "Real Estate Economics"
## [13] "Development Policy Review"
## [14] "Managerial and Decision Econ"
## [15] "Journal of Empirical Finance"
## [16] "International Journal of Finance & Economics"
## [17] "Journal of Economics & Management Strategy"
## [18] "Atlantic Economic Journal"
## [19] "Economic Development Quarterly"
## [20] "China Economic Review"
```

[21] "Information Economics and Policy"
 ## [22] "Australian Economic Papers"
 ## [23] "Japan and the World Economy"
 ## [24] "Journal of Economic Surveys"
 ## [25] "Insurance Mathematics & Economics"
 ## [26] "De Economist"
 ## [27] "Review of Social Economy"
 ## [28] "Brookings Papers"
 ## [29] "Papers in Regional Science"
 ## [30] "Journal of Population Economics"
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 ## [32] "International Organization"
 ## [33] "Canadian Public Policy"
 ## [34] "Developing Economies"
 ## [35] "Journal of Housing Economics"
 ## [36] "Journal of Economics & Business"
 ## [37] "Journal of Evolutionary Economics"
 ## [38] "Empirical Economics"
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 ## [40] "Agricultural Economics"
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 ## [73] "Mathematical Social Sciences"
 ## [74] "Omega"

[75] "History of Political Economy"
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Journals[,1]

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## [178] "Journal of Political Economy"
## [179] "Econometrica"
## [180] "American Economic Review"
```

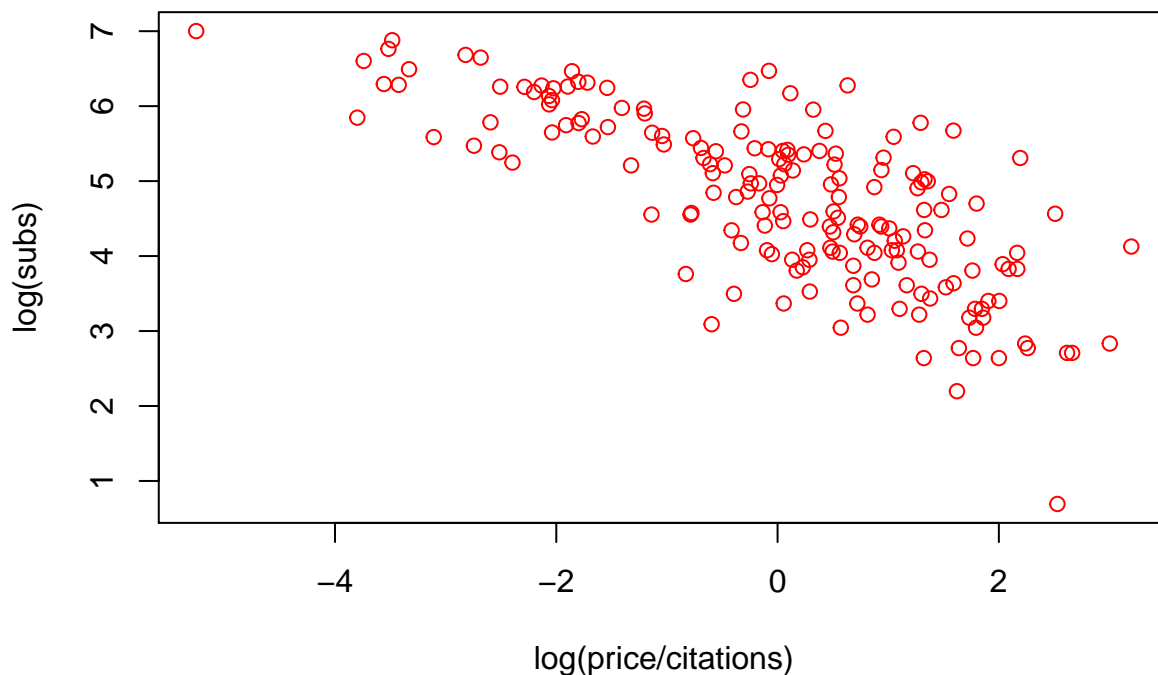
```
Journals[60,1]
```

```
## [1] "American Journal of Economics & Sociology"
```

```
data("Journals",package="AER")
```

```
plot(log(subs)~log(price/citations),data=Journals,main="Demand for Journals",col="red")
```

Demand for Journals



```
x=c(23,56,78,89,90,45,56,34)
mean(x)
```

```
## [1] 58.875
```

```
sd(x)
```

```
## [1] 24.94816
```

```
hist(x)
```

