



EDUCACIÓN
SECRETARÍA DE EDUCACIÓN PÚBLICA



**Tecnológico Nacional de México
Instituto Tecnológico Campus Tijuana
Ing. en Sistemas Computacionales**

Subdirección académica
Departamento de sistemas y computación

Asignatura:
Minería de datos

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Práctica 1

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Test the Law Of Large Numbers for N random normally distributed numbers with mean = 0, stdev=1:

Create an R script that will count how many of these numbers fall between -1 and 1 and divide by the total quantity of N

You know that $E(X) = 68.2\%$

Check that $\text{Mean}(X_n) \rightarrow E(X)$ as you rerun your script while increasing N

Hint:

1. Initialize sample size
2. Initialize counter
3. loop for(i in rnorm(size))
4. Check if the iterated variable falls
5. Increase counter if the condition is true
6. return a result <- counter / N

```
1 #Sample Size
2 sampleSize<-500
3
4 #Sample
5 sampleSize.sample<-rnorm(sampleSize,mean=0,sd=1)
6
7 #Percentage of interest
8 percentofInterest<-sum((sampleSize.sample>=-1)&(sampleSize.sample<=1))/sampleSize
9
10 #Print percentage
11
12 for(i in rnorm(sampleSize)){
13   print(percentofInterest * 100)
14 }
15 |
```

values	
i	-1.48650313963767
percentofInterest	0.678
sampleSize	500
sampleSize.sample	num [1:500] 0.803 0.193 -0.234 1.42 -0.418 ...