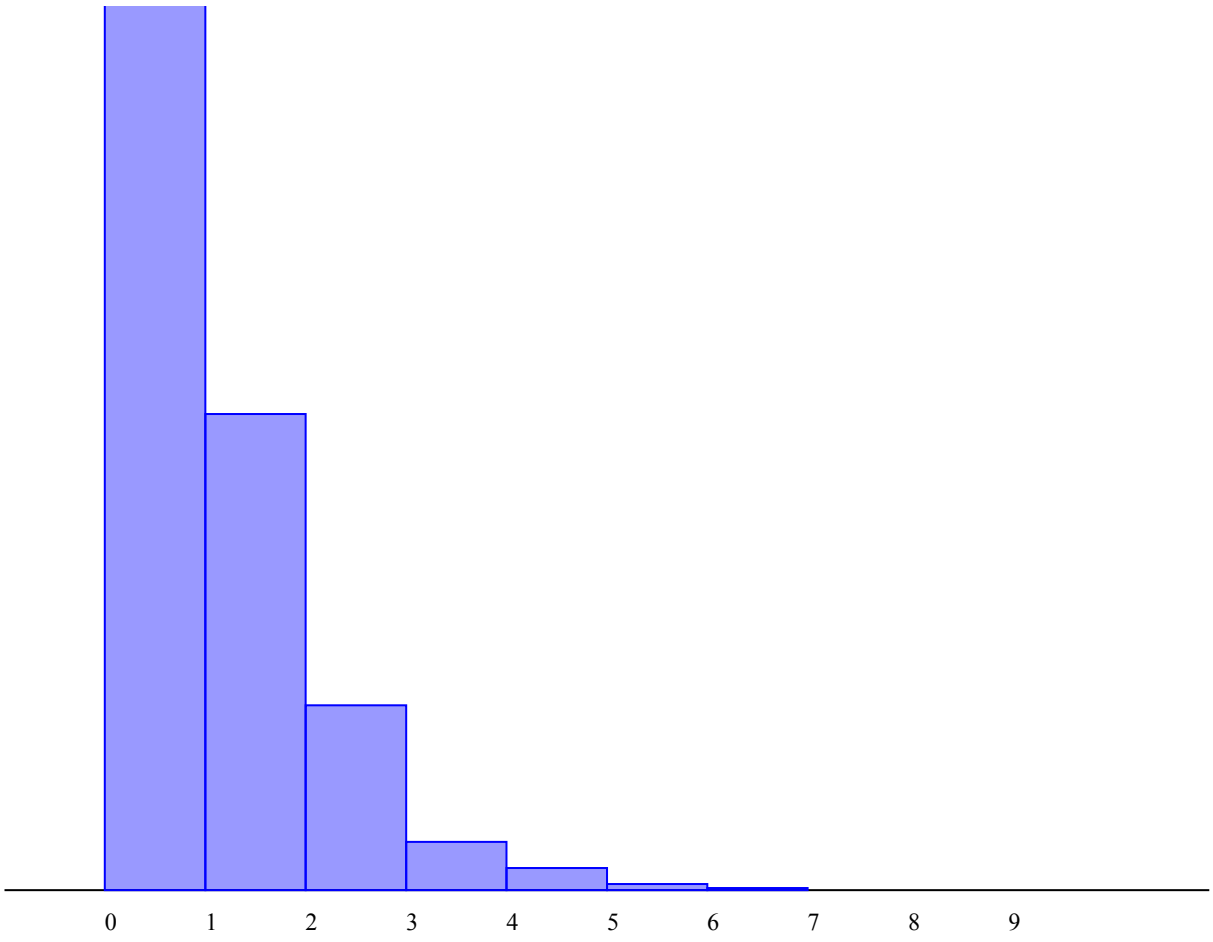
SIMULATION DE VARIABLE ALEATOIRE EXPONENTIELLE

Suivre ce lien

I) opposé d'un logarithme d'une variable uniforme

1) simulation

```
liste = ( -ln(alea()) for n in [1..1000])
histogramme liste, 0, 10,10
```



2) Espérance- écart type

```
liste = ( -ln(alea()) for n in [1..1000])
affiche laMoyenneDe liste
```

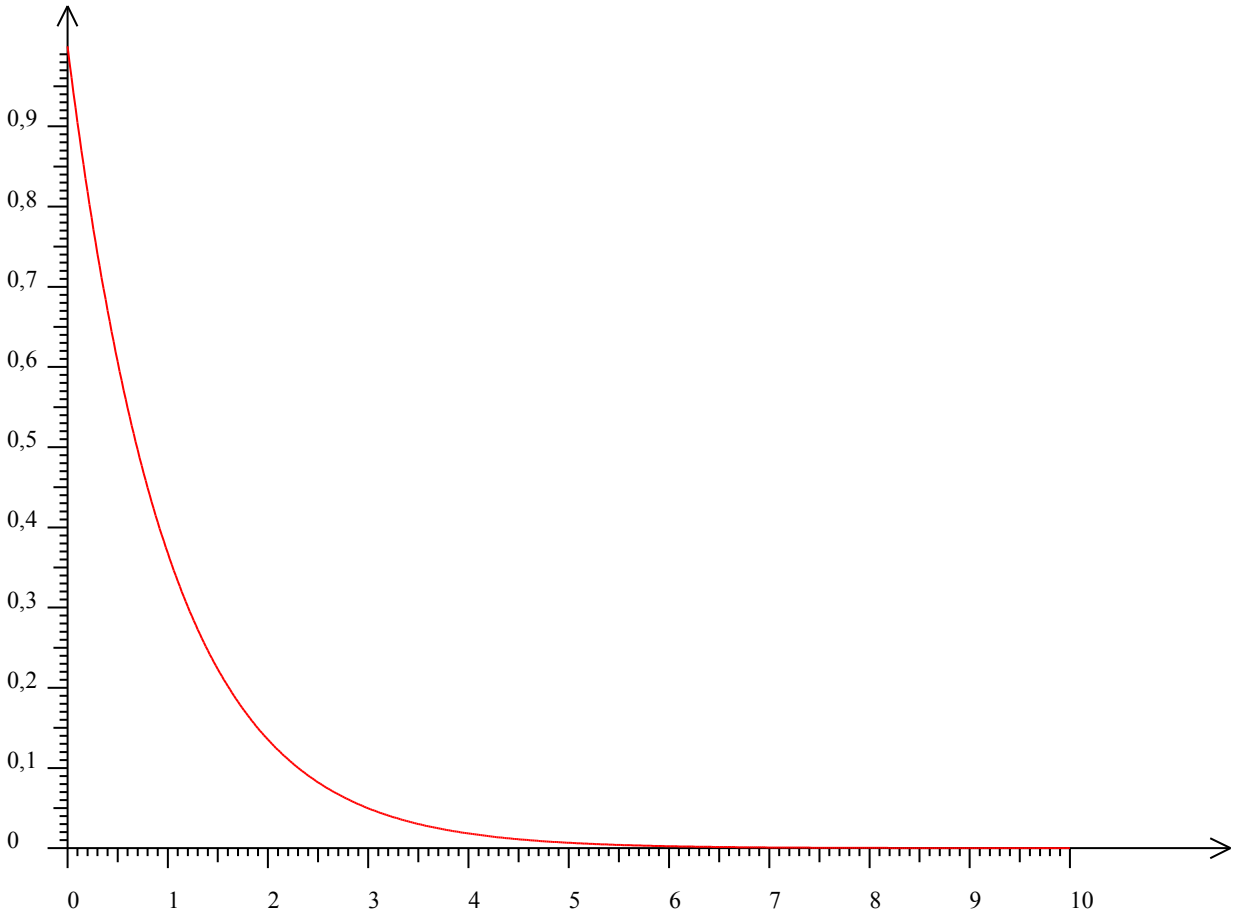
La moyenne est : 0.9612581809194957

```
liste = ( -ln(alea()) for n in [1..1000])
affiche lEcartTypeDe liste
```

L'écart type : 0.9683078880372219

3. La loi

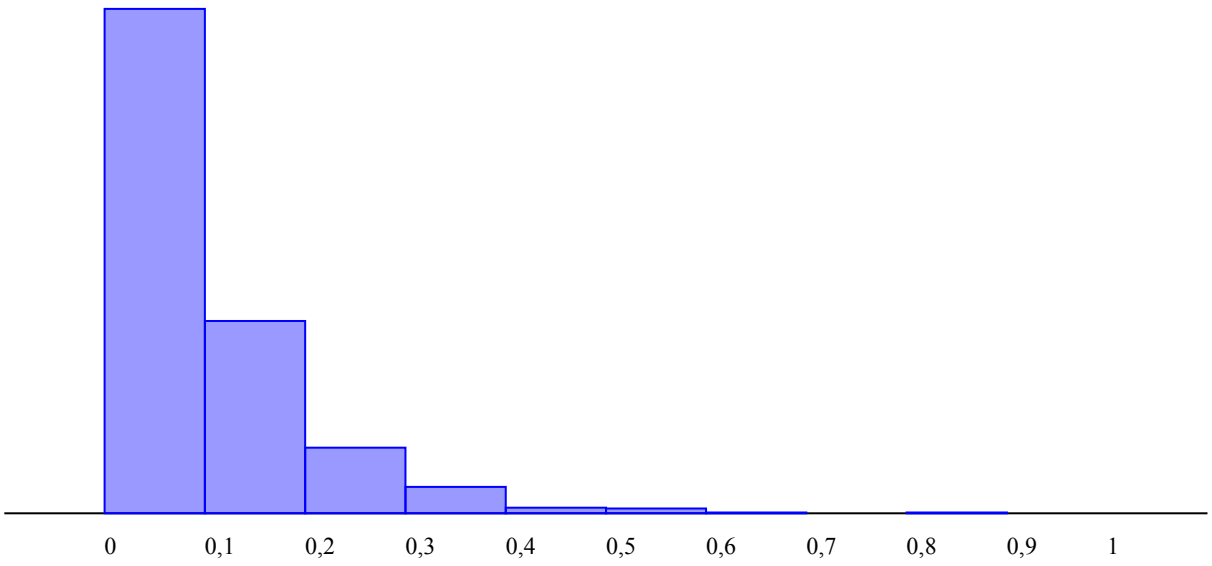
```
liste = ( -ln(alea()) for n in [1..1000])
f = (x) -> exp(-x)
dessineFonction f,0,10,0,1
```



II) Variable aléatoire exponentielle de paramètre 10

1. Simulation

```
liste = ( -0.1*ln(alea()) for n in [1..1000])
histogramme liste, 0, 1,10, 1000
```



2. Variance et écart-type

```
liste = ( -0.1*ln(alea()) for n in [1..1000])
affiche laMoyenneDe liste
```

La moyenne est :0.10165688158268672

```
liste = ( -0.1*ln(alea()) for n in [1..1000])
affiche lEcartTypeDe liste
```

L'écart-type est :0.10150095916122205

3. La Loi

```
liste = ( -0.1*ln(alea()) for n in [1..1000])
f = (x) -> 10*exp(-10*x)
dessineFonction f,0,1,0,10
```