Variables aléatoires exponentielles

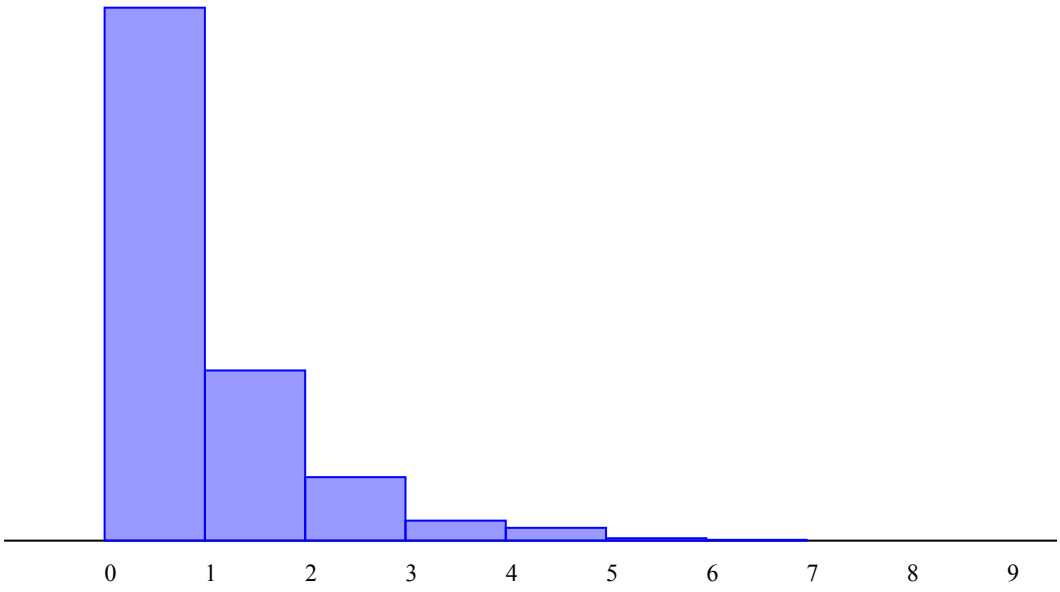
I) Variables exponentielles de paramètre 1

1) Histogramme

On note

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

On obtient



2) Moyenne et écart-type

- Moyenne

On note

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

On obtient 10 fois de suite

0.991538509202726	0.9879520469414461
1.000906537185865	1.001093277740638
1.0033781040366656	0.9418579604551395
0.9588218354044635	0.9688301600264903
0.9640798983745166	0.9926075387656778

- Ecart-type

On note

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

On obtient 10 fois de suite

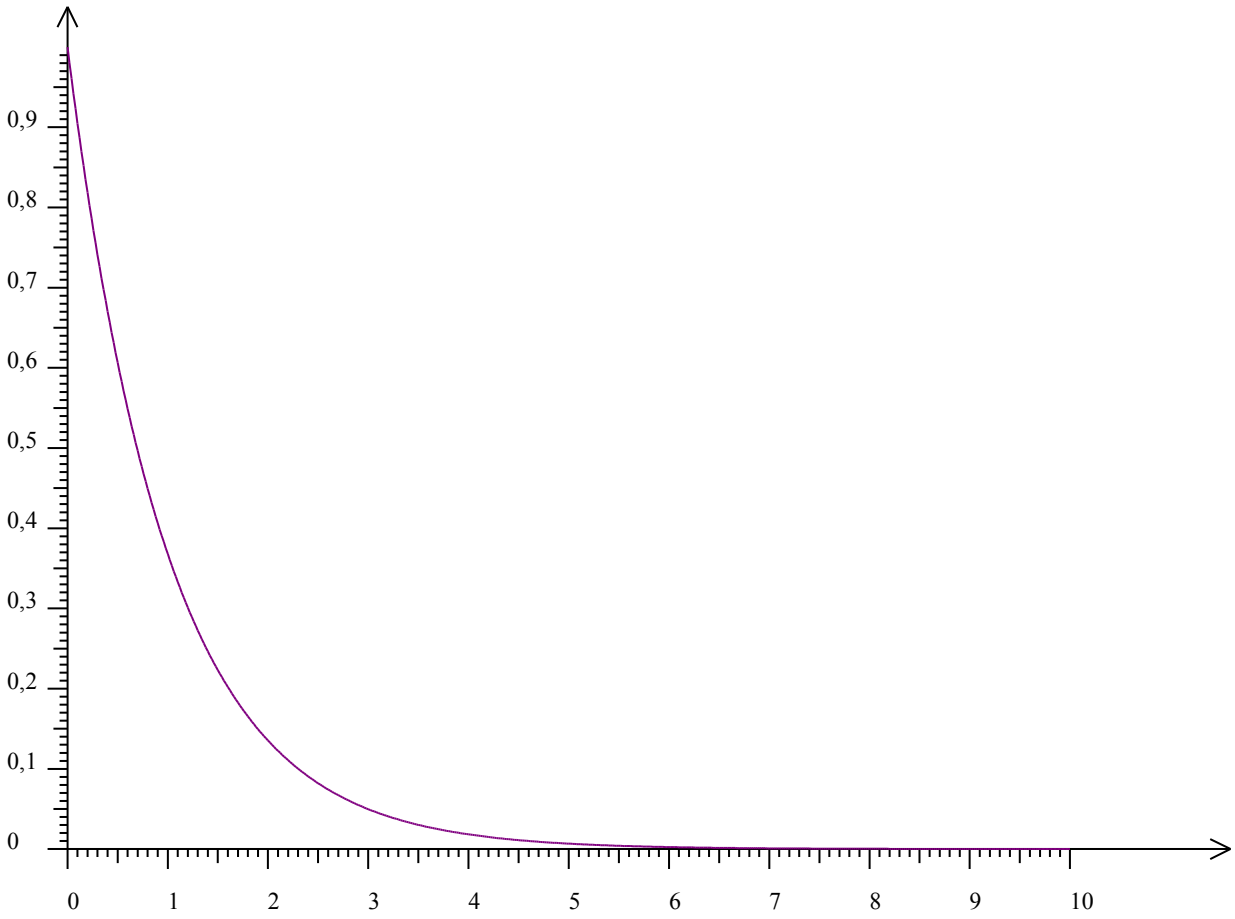
0.9290771338844727	1.1159011938698984
1.0274944839225577	1.1361966358689513
1.0735990123461796	0.9416643178544579
0.9951542276936071	0.9563840727233396
0.9305814699441768	0.9588320662754487

3) Loi

On tape

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

On obtient



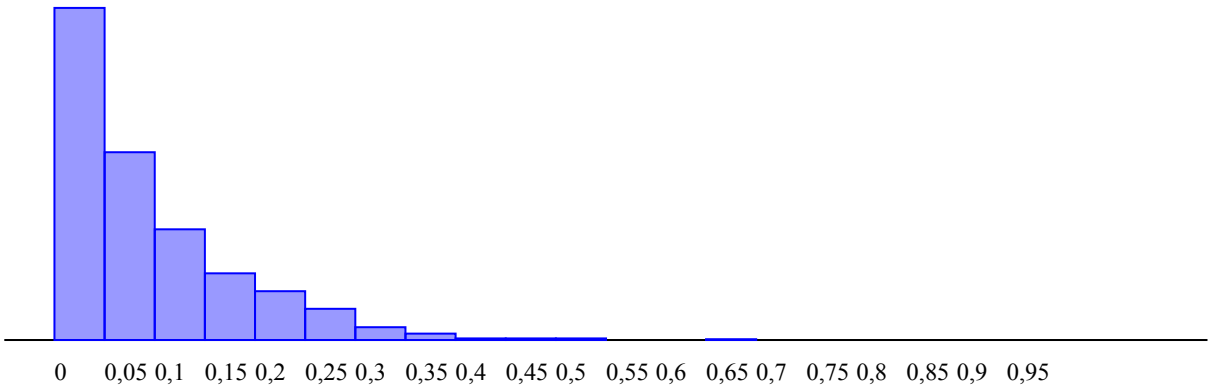
II) Variables exponentielles de paramètre 10

1) Histogramme

On tape

```
liste = ( -0.1*ln(alea()) for n in [1..1000])
histogramme liste, 0, 1, 20, 1000
```

On obtient



2) Moyenne et écart-type

- Moyenne

On tape

```
liste = ( -0.1*ln(alea()) for n in [1..1000])
histogramme liste, 0, 1, 20, 1000
affiche laMoyenneDe liste
```

On obtient

0.10044309389131109
0.10261607247579939
0.09713442235014044
0.0964243277300371
0.09996962299736527
0.09566407654538168
0.0979962955826121
0.09881615907845086
0.10050831862460503
0.0986205176960257

- Ecart-type

On tape

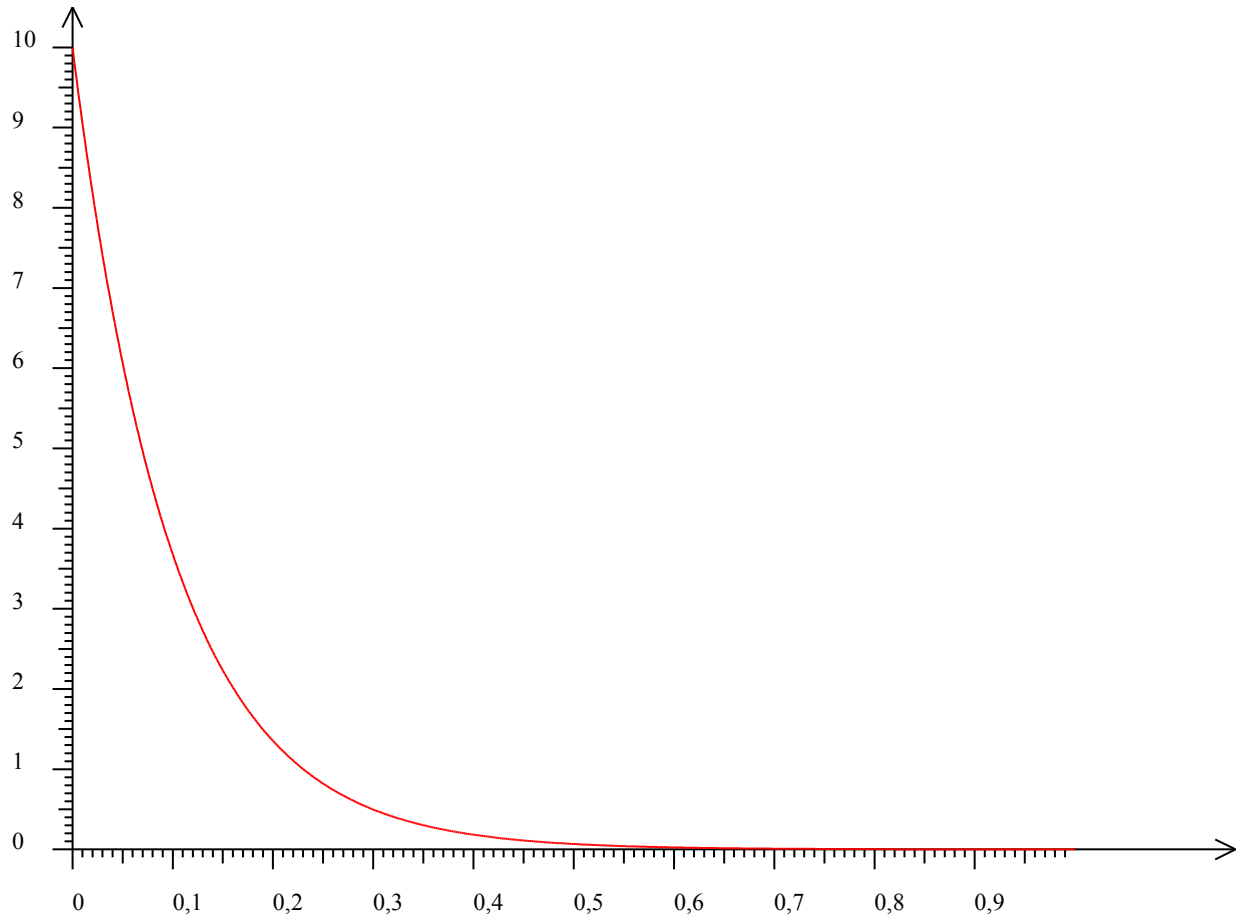
```
liste = ( -0.1*ln(alea()) for n in [1..1000])
histogramme liste, 0, 1, 20, 1000
affiche laMoyenneDe liste
affiche lEcartTypeDe liste
```

On obtient

0.09680185548357159	0.10506040921071098
0.09831164321695543	0.10228424529846739
0.10300822085749285	0.10755839696133601
0.09784260422790897	0.0965677858019828
0.10322007645873706	0.10488433214793322

3) Loi

On tape

```
liste = ( -0.1*ln(alea()) for n in [1..1000])
histogramme liste, 0, 1, 20, 1000
affiche laMoyenneDe liste
affiche lEcartTypeDe liste
dessineFonction f,0,1,0,1
```

On obtient