

Un po' di conti con R

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$e = 2.7182818284590 \dots$

```
> nepero.stampa = function(nrepl=10){
+   sommatoria = 0
+   for(i in 1:nrepl){
+     somma=0
+     passi=0
+     while(somma<1){
+       x = runif(1,min=0,max=1)
+       somma= somma + x
+       passi = passi +1
+       print(paste("x = ", x, "somma = ", somma))
+     }
+     print(paste("addendi necessari = ", passi))
+     sommatoria = sommatoria +passi
+     numero = sommatoria/nrepl
+   }
+   return(numero)
}
```

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```

> nepero.stampa(3)
[1] "x = 0.471521817147732 somma = 0.471521817147732"
[1] "x = 0.259943447541445 somma = 0.731465264689177"
[1] "x = 0.961298547917977 somma = 1.69276381260715"
[1] "addendi necessari = 3"
[1] "x = 0.34814626770094 somma = 0.34814626770094"
[1] "x = 0.360761466203257 somma = 0.708907733904198"
[1] "x = 0.906922378810123 somma = 1.61583011271432"
[1] "addendi necessari = 3"
[1] "x = 0.878186135552824 somma = 0.878186135552824"
[1] "x = 0.753064807737246 somma = 1.63125094329007"
[1] "addendi necessari = 2"
[1] 2.666667
  
```

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```
> nepero.stampa(3)
[1] "x = 0.990168200340122 somma = 0.990168200340122"
[1] "x = 0.274367363657802 somma = 1.26453556399792"
[1] "addendi necessari = 2"
[1] "x = 0.310078250942752 somma = 0.310078250942752"
[1] "x = 0.628038288094103 somma = 0.938116539036855"
[1] "x = 0.56093581370078 somma = 1.49905235273764"
[1] "addendi necessari = 3"
[1] "x = 0.595493057277054 somma = 0.595493057277054"
[1] "x = 0.169480212964118 somma = 0.764973270241171"
[1] "x = 0.0188182829879224 somma = 0.783791553229094"
[1] "x = 0.0620550808962435 somma = 0.845846634125337"
[1] "x = 0.948873344808817 somma = 1.79471997893415"
[1] "addendi necessari = 5"
[1] 3.333333
```

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```
> nepero.stampa.addendi = function(nrepl=10){
+   sommatoria = 0
+   for(i in 1:nrepl){
+     somma=0
+     passi=0
+     while(somma<1){
+       x = runif(1,min=0,max=1)
+       somma= somma + x
+       passi = passi +1
+     }
+     print(paste("addendi nec. = ", passi))
+     sommatoria = sommatoria +passi
+     numero = sommatoria/nrepl
+   }
+   return(numero)
+ }
```

$e = 2.7182818284590 \dots$

```
> nepero.stampa.addendi(25)
```

```
[1] "addendi nec. = 3"
```

```
[1] "addendi nec. = 2"
```

```
[1] "addendi nec. = 3"
```

```
[1] "addendi nec. = 4"
```

```
[1] "addendi nec. = 2"
```

```
[1] "addendi nec. = 3"
```

```
[1] "addendi nec. = 2"
```

```
[1] "addendi nec. = 2"
```

```
[1] "addendi nec. = 5"
```

```
[1] "addendi nec. = 4"
```

```
[1] "addendi nec. = 2"
```

```
[1] "addendi nec. = 2"
```

```
[1] "addendi nec. = 2"
```

```
[1] "addendi nec. = 2"
```

```
[1] "addendi nec. = 4"
```

```
[1] "addendi nec. = 2"
```

```
[1] "addendi nec. = 3"
```

```
[1] "addendi nec. = 2"
```

```
[1] "addendi nec. = 2"
```

```
[1] "addendi nec. = 2"
```

```
[1] "addendi nec. = 2"
```

```
[1] "addendi nec. = 3"
```

```
[1] "addendi nec. = 2"
```

```
[1] "addendi nec. = 3"
```

```
[1] "addendi nec. = 3"
```

```
[1] 2.64
```

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```
> nepero = function(nrepl=10){
+   sommatoria = 0
+   for(i in 1:nrepl){
+     somma=0
+     passi=0
+     while(somma<1){
+       x = runif(1,min=0,max=1)
+       somma= somma + x
+       passi = passi +1
+     }
+     sommatoria = sommatoria +passi
+     numero = sommatoria/nrepl
+   }
+   return(numero)
+ }
```

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```
> nepero(10)
```

```
[1] 2.3
```

```
> nepero(10)
```

```
[1] 2.9
```

```
> nepero(10)
```

```
[1] 3.3
```

```
> nepero(10^2)
```

```
[1] 2.75
```

```
> nepero(10^2)
```

```
[1] 2.65
```

```
> nepero(10^2)
```

```
[1] 2.71
```

```
> nepero(10^3)
```

```
[1] 2.694
```

```
> nepero(10^3)
```

```
[1] 2.806
```

```
> nepero(10^3)
```

```
[1] 2.663
```

```
> nepero(10^4)
```

```
[1] 2.7083
```

```
> nepero(10^4)
```

```
[1] 2.718
```

```
> nepero(10^4)
```

```
[1] 2.7254
```

```
> nepero(10^5)
```

```
[1] 2.71863
```

```
> nepero(10^5)
```

```
[1] 2.71867
```

```
> nepero(10^5)
```

```
[1] 2.71627
```

```
> nepero(10^6)
```

```
[1] 2.719159
```

```
> nepero(10^6)
```

```
[1] 2.718215
```

```
> nepero(10^6)
```

```
[1] 2.718826
```