

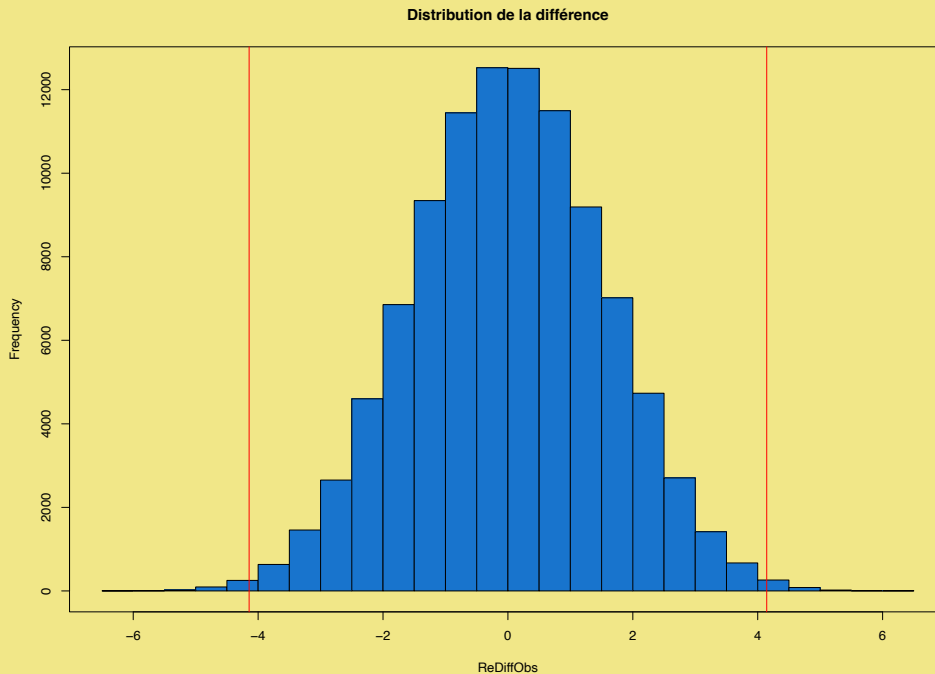
Ma solution:

```
library(Sleuth3)
attach(case0101)
mExt <- mean(Score[Treatment=="Extrinsic"])
mInt <- mean(Score[Treatment=="Intrinsic"])
(test.stat1 <- mExt - mInt )
```

Ma solution:

```
set.seed(2022) ; #variable <- Score
n <- length(Score) ; nPerm <- 100000
ReDiffObs <- rep(0,nPerm) ; ReEchantillonT <- rep(NA,n)
for(i in 1:nPerm){
  ReEchantillonT <- sample(Treatment , size = n , replace = FALSE)
  ReDiffObs[i] <- mean(Score[ReEchantillonT=="Extrinsic"])
                - mean(Score[ReEchantillonT=="Intrinsic"])
}
hist(ReDiffObs,col = "dodgerblue3",main="Dis. de la diff.") ; box()
abline(v=test.stat1,col="red") ; abline(v=-test.stat1,col="red")
(sum(ReDiffObs <= test.stat1) + sum(ReDiffObs >= -test.stat1))/nPerm
```

```
[1] 0.0051587 # Avec 10 000 000
```



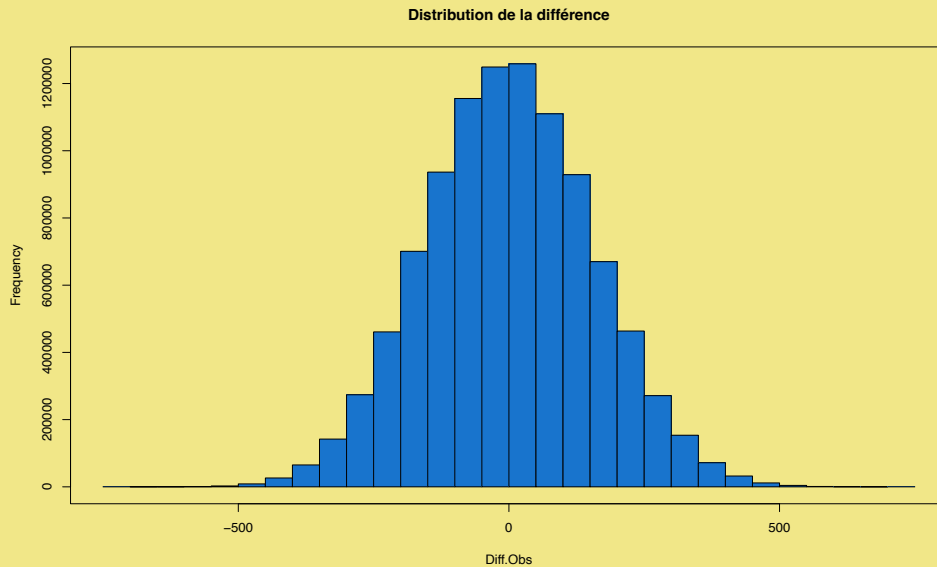
Test de permutation :

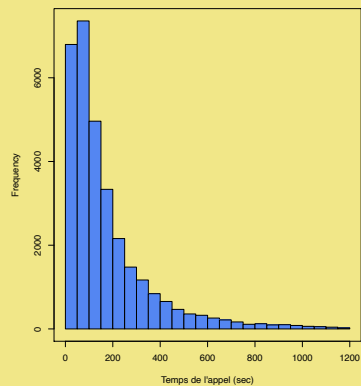
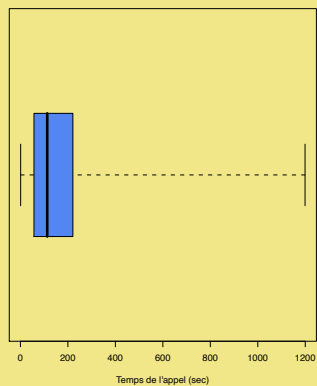
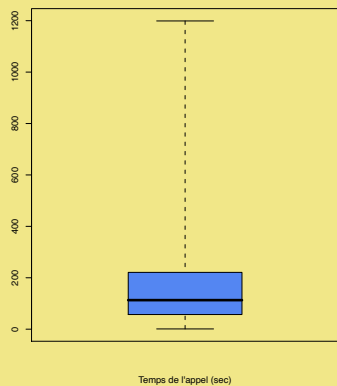
```
library(Sleuth3)
attach(case0102)
(stat.test <- mean(Salary[Sex=="Male"]) -
  mean(Salary[Sex=="Female"]))
```

```
[1] 818.0225
```

```
set.seed(2023) ;
n <- length(Salary) ; nPerm <- 10000000
Diff.Obs <- rep(NA,nPerm)
SalairePermute <- rep(NA,n)
for(i in 1:nPerm){
  SalairePermute <- sample(Salary , size = n , replace = FALSE)
  Diff.Obs[i] <- mean(SalairePermute[Sex=="Male"]) -
    mean(SalairePermute[Sex=="Female"])
}
hist(Diff.Obs,col = "dodgerblue3",main="Distribution de la différence")
abline(v=stat.test,col="red")
abline(v=-stat.test,col="red")
(sum(Diff.Obs <= -stat.test) + sum(Diff.Obs >= stat.test)) / nPerm
```

```
[1] 0 # Avec 10 000 000
```





Jeu: retrouvez quels « box-plots » correspondent à quels histogrammes.

