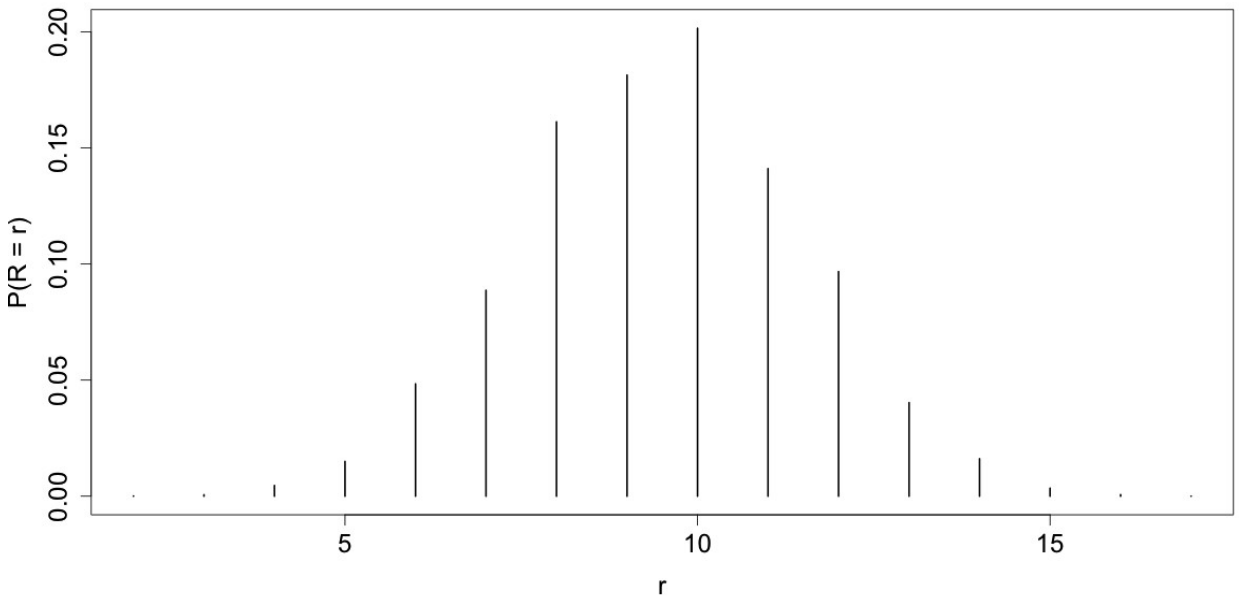
Teste das corridas em R

```
### Teste das corridas de Wald-Wolfowitz

library(randomizeBE)

## 1. Distribuição exata
n1 <- 9
n2 <- 8
n <- n1 + n2

# Função massa de probabilidade
# pruns.exact: função distribuição acumulada
fmp <- numeric(n - 2 + 1)
fda0 <- 0
for (r in 2:n) {
   fda <- pruns.exact(r, n1, n2, tail = "lower")
   fmp[r - 1] <- fda - fda0
   fda0 <- fda
}

plot(2:n, fmp, type = "h", xlab = "r", ylab = "P(R = r)", lwd = 2,
     cex.lab = 1.5, cex.axis = 1.5)
```



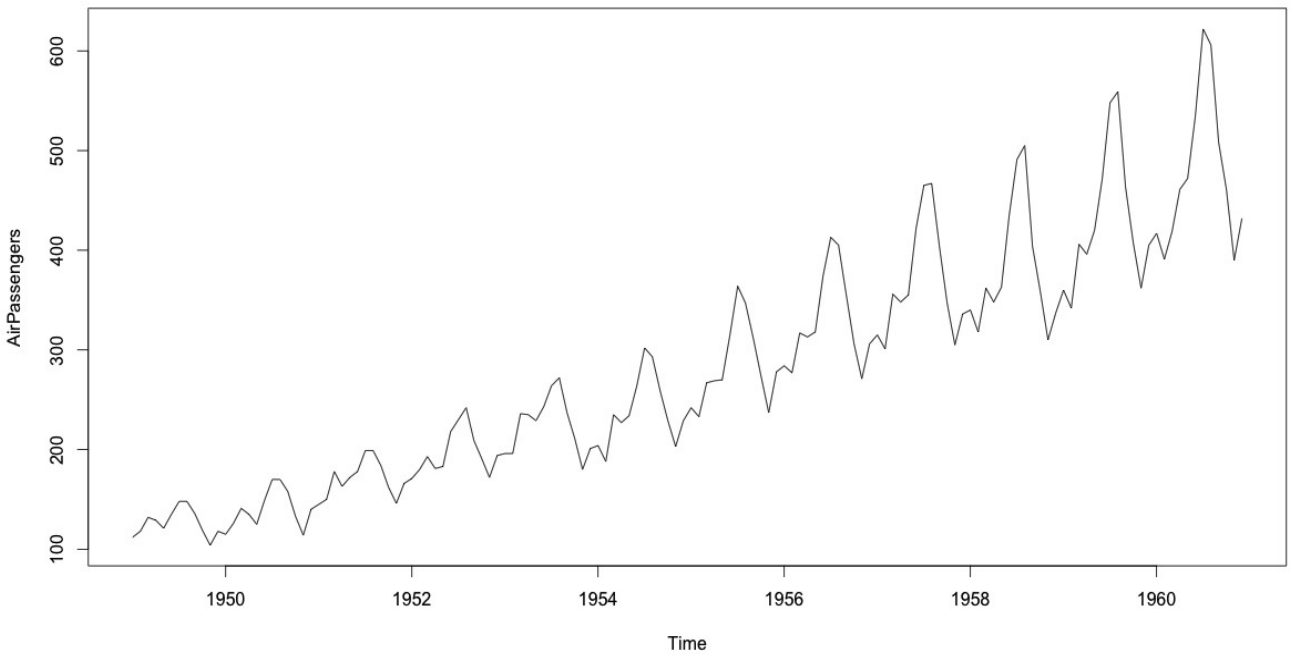

```
## 2. Exemplos
# runs.pvalue: cálculo do valor-p para H1 bilateral
# Primeiro argumento deve ser um vetor numérico
# Dicotomização com a mediana se existirem mais de dois valores diferentes
```

```
# 2.1. x ~ N(0, 1)
x <- rnorm(50)
runs.pvalue(x, pmethod = "exact")

  0.3172097

runs.pvalue(x, pmethod = "normal")

  0.2529991

runs.pvalue(x, pmethod = "cc")

  0.3172097
```

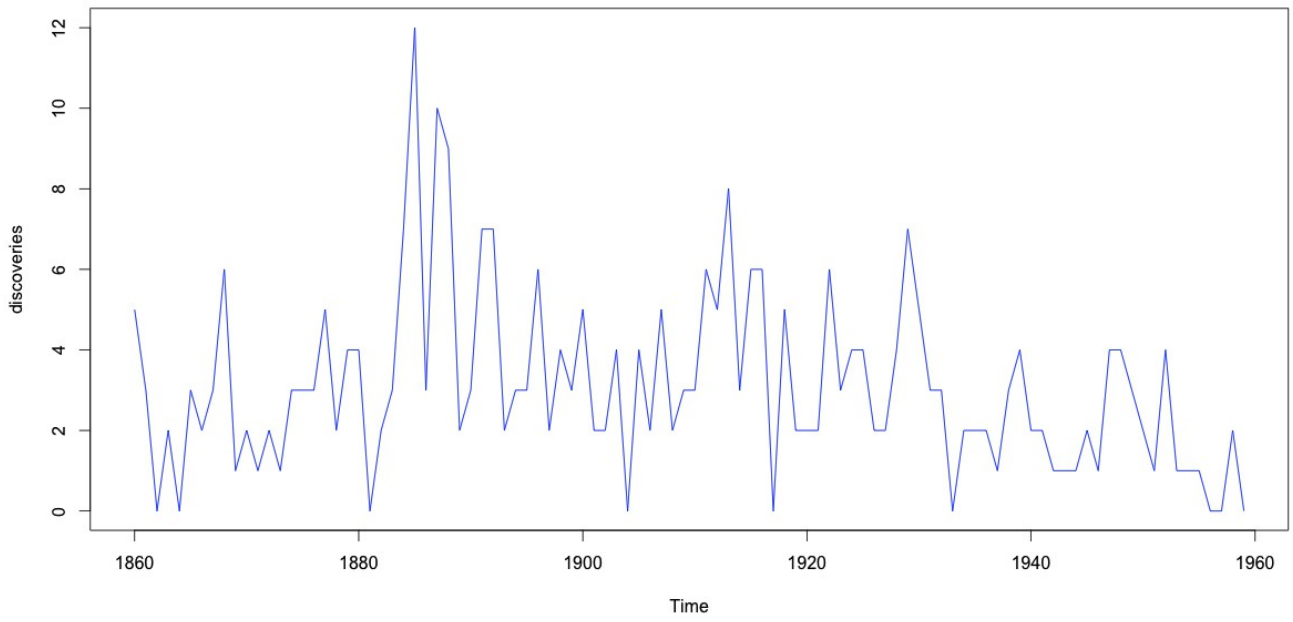
Nota 1. Qual o número de corridas neste exemplo?

Nota 2. Explique os resultados das duas sequências de comandos abaixo.

```
y = ifelse(x > median(x), 1, -1)
runs.pvalue(y, pmethod = "exact")

runs.pvalue(sign(x), pmethod = "exact")


# 2.2. Monthly airline passenger numbers 1949-1960 (n = 144)
# Conjunto de dados AirPassengers do pacote datasets

plot(AirPassengers)
```



```
runs.pvalue(AirPassengers, pmethod = "exact")

  3.931479e-27

runs.pvalue(AirPassengers, pmethod = "normal")

  1.577406e-27

runs.pvalue(AirPassengers, pmethod = "cc")

  3.931479e-27

# 2.3. The numbers of "great" inventions and scientific discoveries
#        in each year from 1860 to 1959 (n = 100)
# Conjunto de dados discoveries do pacote datasets

plot(discoveries, col = "blue")
```




```
runs.pvalue(discoveries, pmethod = "exact")

   0.01293409

runs.pvalue(discoveries, pmethod = "normal")

   0.009696892

runs.pvalue(discoveries, pmethod = "cc")

   0.01293409
```