SPRAWOZDANIE 3

Modele statystyczne

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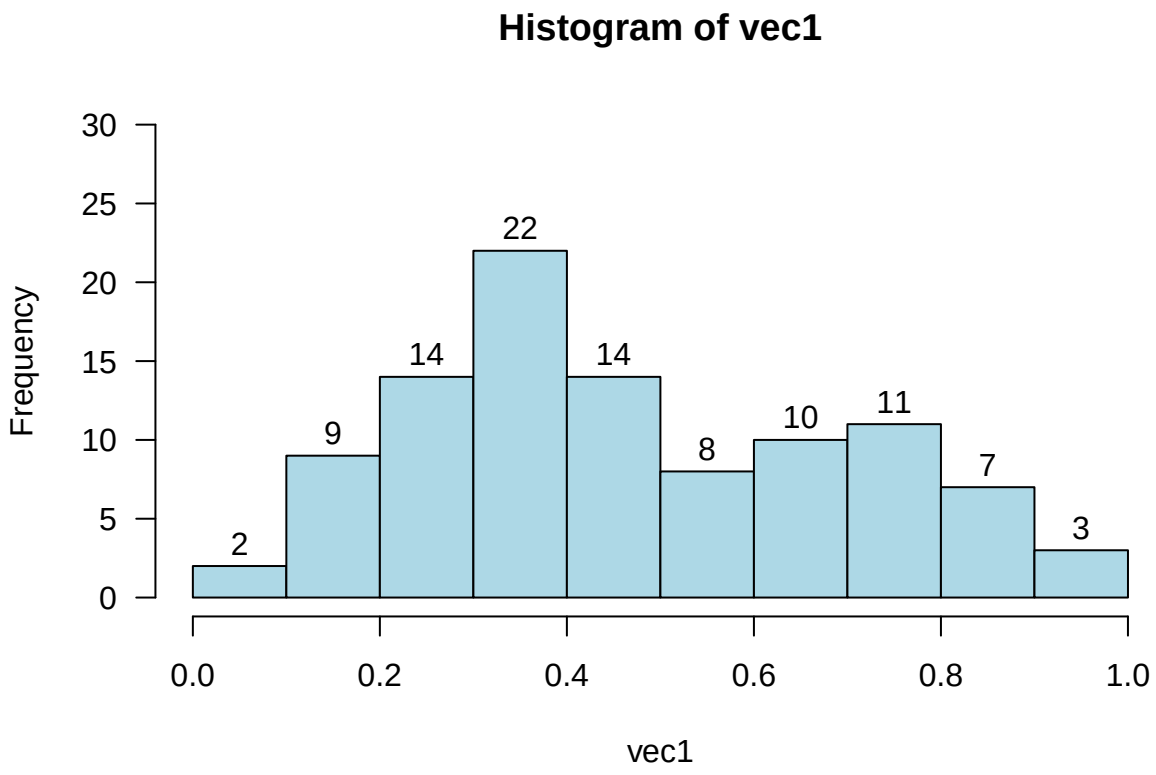
Ad. 1

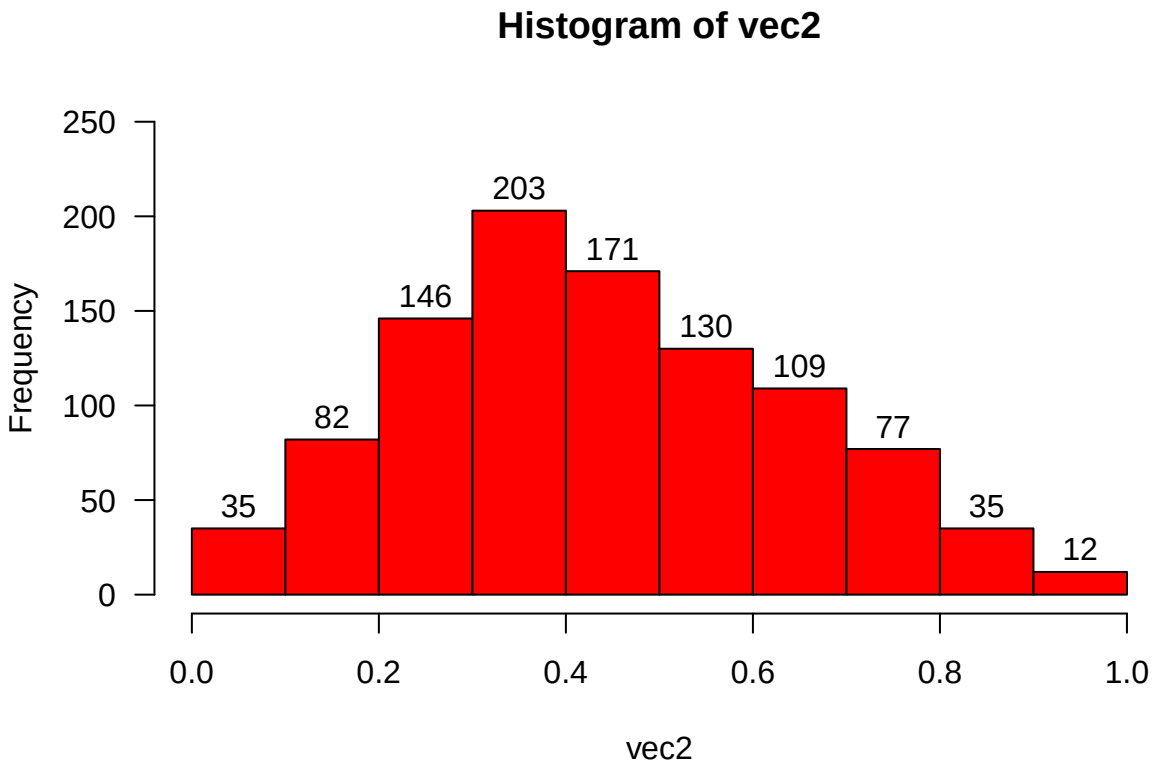
```
library(triangle)
datamean <- nchar("Michał")/(nchar("Michał") + nchar("Krzyszczuk"))
```

Ad. 2

```
vec1 <- rtriangle(100, 0, 1, datamean)
vec2 <- rtriangle(1000,0,1,datamean)
hist(vec1, plot=TRUE, labels=TRUE, col = "lightblue", border = "black",
las=1, breaks=10, ylim=c(0,30))
```

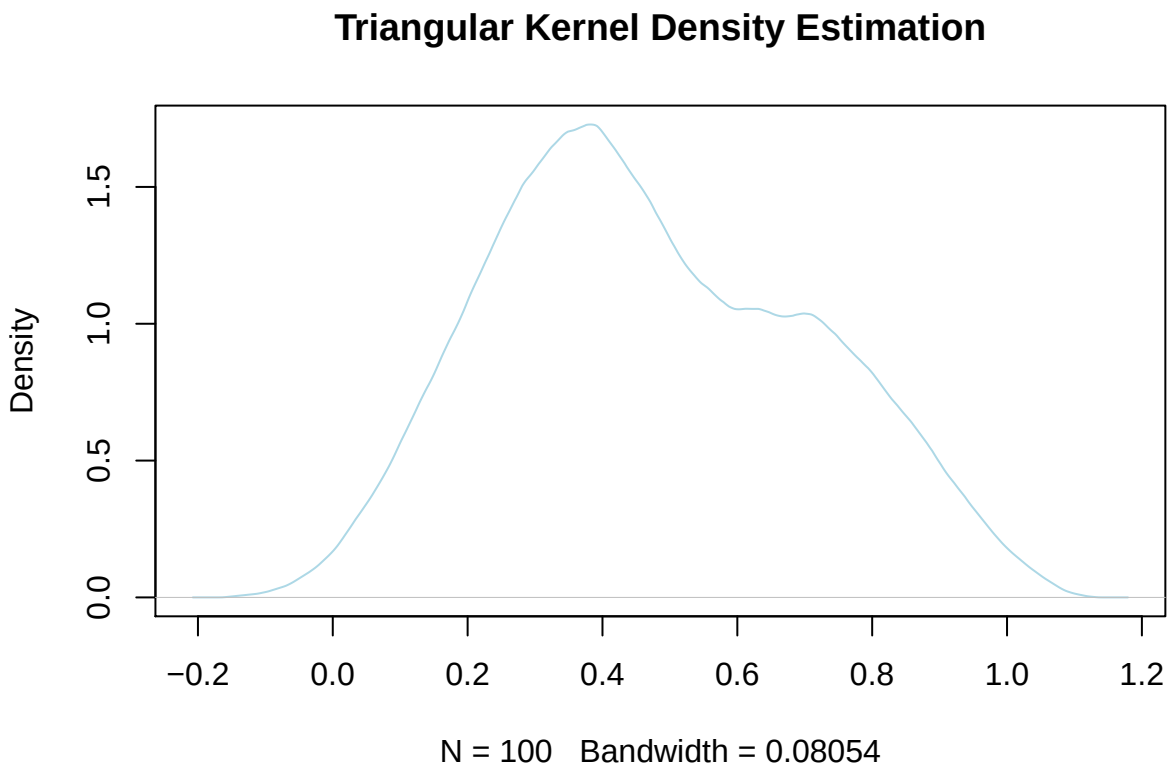


```r
hist(vec2, plot=TRUE, labels=TRUE, col = "red", border = "black",
las=1, breaks=10, ylim=c(0,250))
```

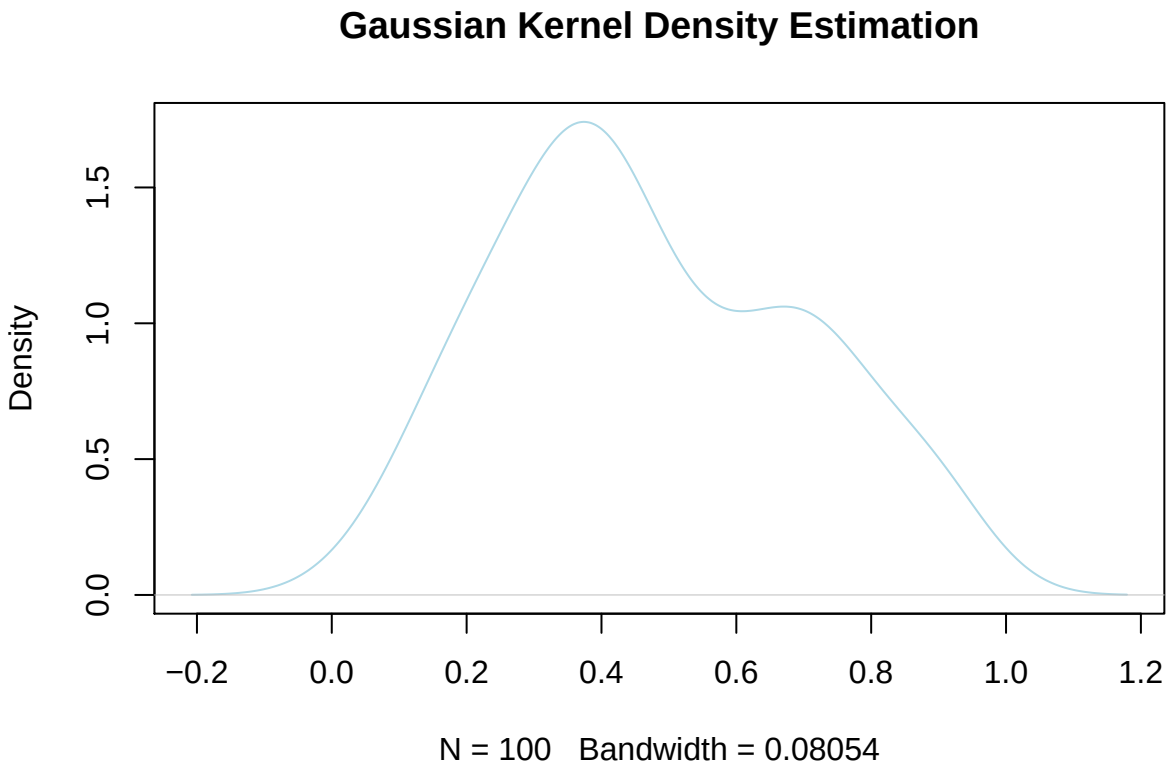


Ad. 3

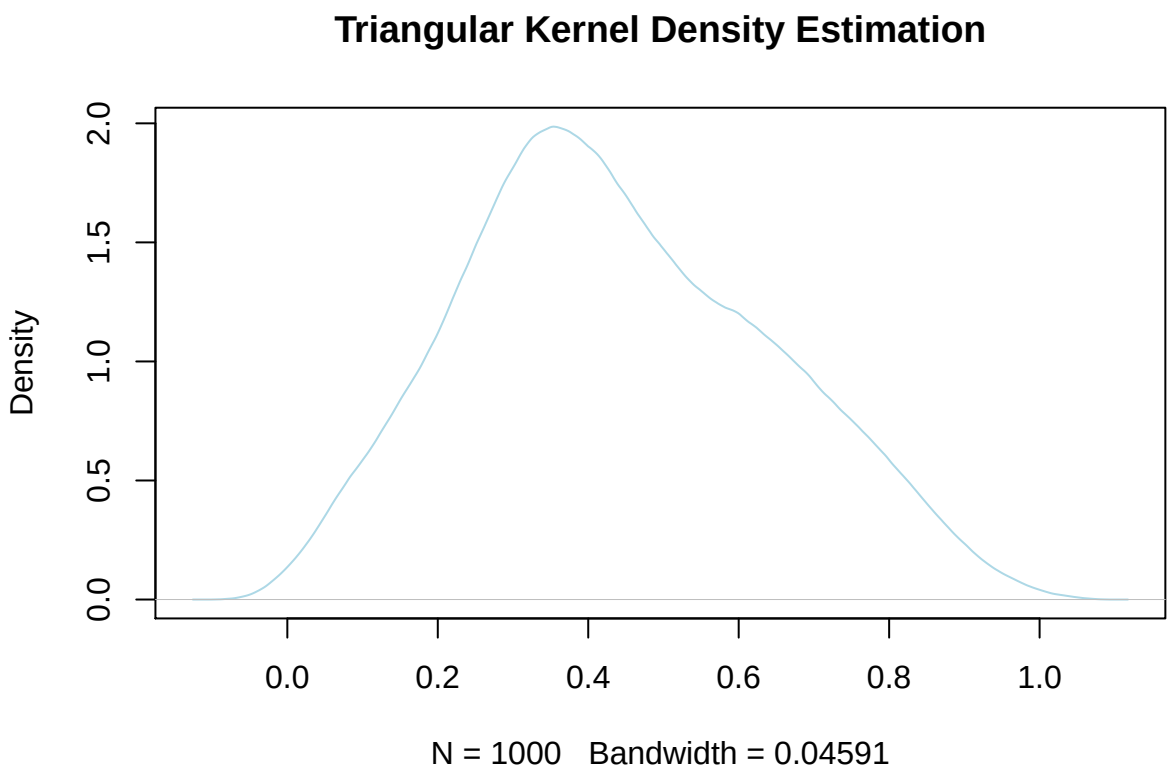
```
Gaussian_vec1 <- density(vec1,kernel=c("gaussian"))
Triangular_vec1 <- density(vec1,kernel=c("triangular"))
plot(Triangular_vec1,col= "lightblue",main="Triangular Kernel Density Estimation")
```



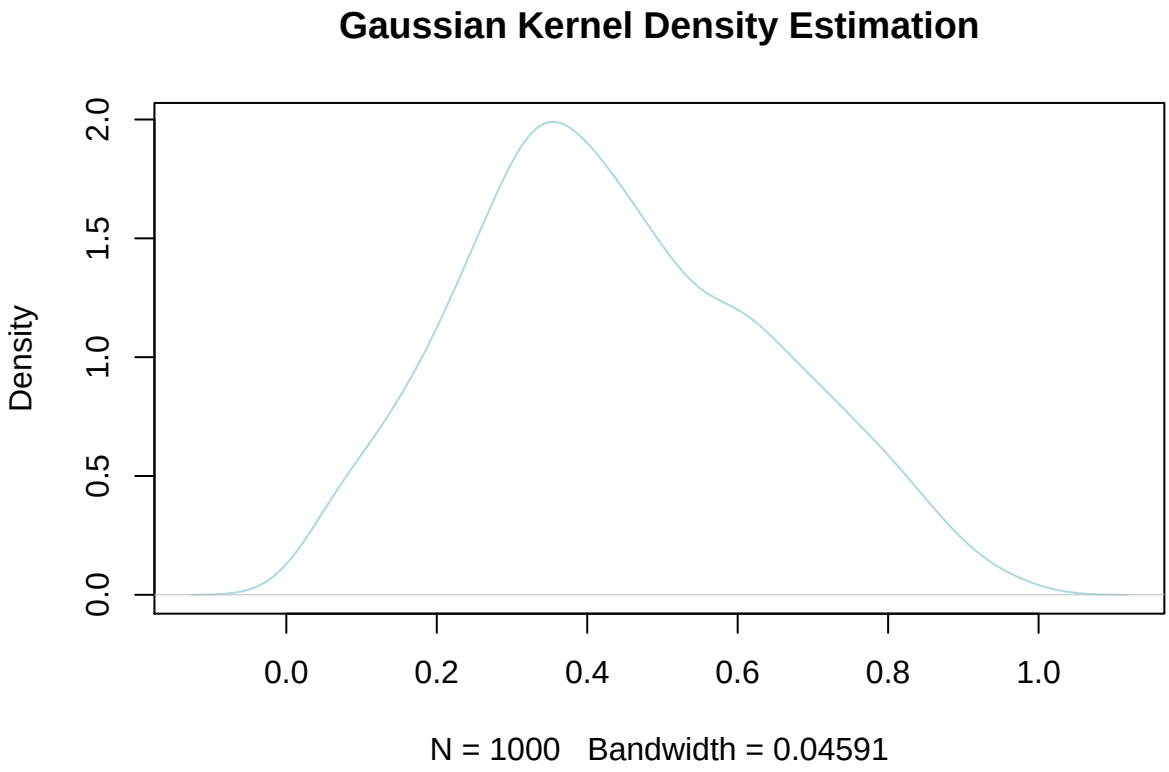
```r
plot(Gaussian_vec1,col= "lightblue",main="Gaussian Kernel Density Estimation")
```



```r
Gaussian_vec2 <- density(vec2,kernel=c("gaussian"))
Triangular_vec2 <- density(vec2,kernel=c("triangular"))
plot(Triangular_vec2,col= "lightblue",main="Triangular Kernel Density Estimation")
```

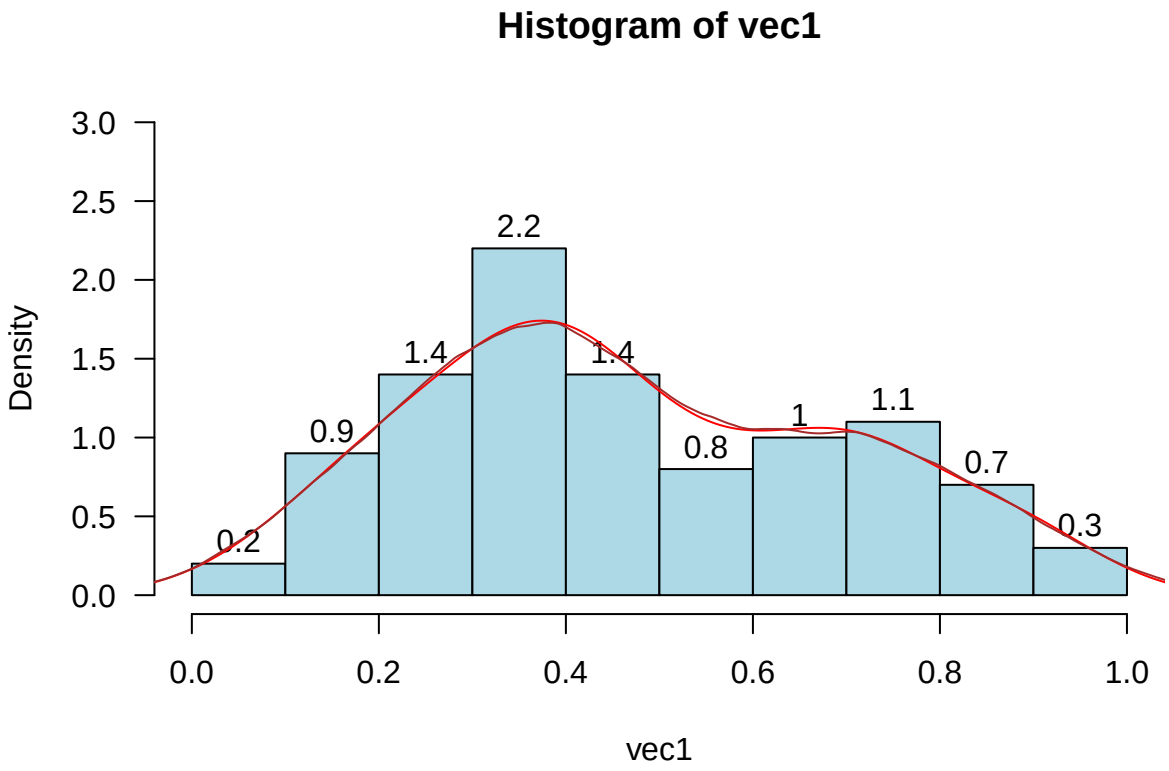


```r
plot(Gaussian_vec2,col= "lightblue",main="Gaussian Kernel Density Estimation")
```



Sprawdzam dopasowanie funkcji gęstości do danych, rysując ponownie histogram wraz z funkcją gęstości prawdopodobieństwa.

```
hist(vec1, plot=TRUE, labels=TRUE, col = "lightblue", border = "black", las=1, breaks=10,
     ylim=c(0,3),prob=TRUE)
lines(Gaussian_vec1,col = "red")
lines(Triangular_vec1,col= "brown")
```



```r
hist(vec2, plot=TRUE, labels=TRUE, col = "red", border = "black", las=1, breaks=10,
     ylim=c(0,3),prob=TRUE)
lines(Gaussian_vec2,col = "blue")
lines(Triangular_vec2,col= "green")
```