Domača naloga 5

Alen Kahteran

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Zagon potrebnih knjižnic

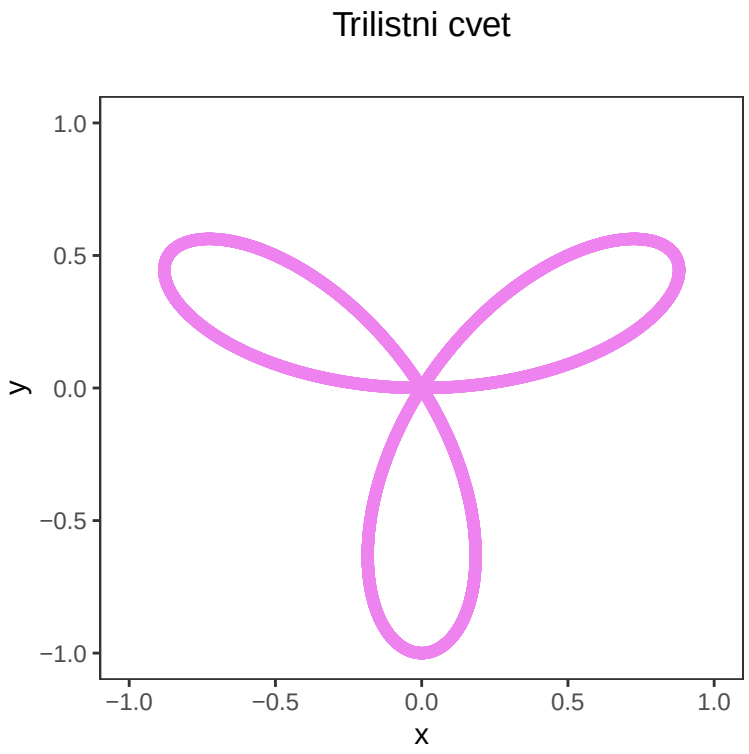
```
library(tidyverse)
library(cowplot)
```

generiranje potrebnih podatkov in uporaba sapply() funkcije

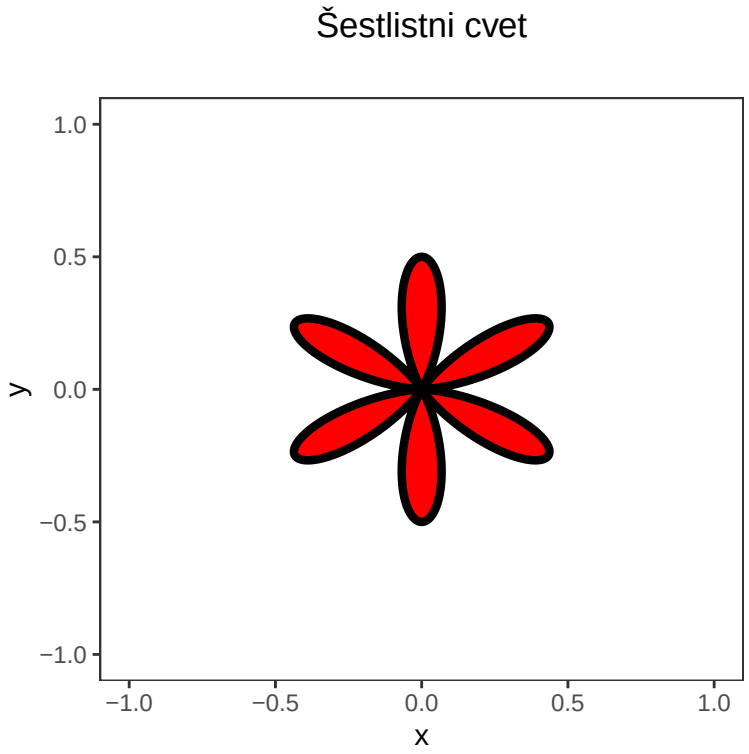
```
# we generate the phi values (r=1 in all cases)
phi <- seq(0, 2*pi, 0.001)

# creating functions to use with sapply()
convert_to_x1 <- function(phi) {
  r <- 1
  return(r*cos(phi)*sin(3*phi))
}
convert_to_y1 <- function(phi) {
  r <- 1
  return(r*sin(phi)*sin(3*phi))
}
convert_to_x2 <- function(phi) {
  r <- 0.5
  return(r*cos(phi)*sin(3*phi)^2)
}
convert_to_y2 <- function(phi) {
  r <- 0.5
  return(r*sin(phi)*sin(3*phi)^2)
}

# usage of sapply function to convert list of phi values to x and y coordinates
x1 <- sapply(phi, convert_to_x1)
y1 <- sapply(phi, convert_to_y1)

x2 <- sapply(phi, convert_to_x2)
y2 <- sapply(phi, convert_to_y2)

# creating tibbles of the generated data
flower3 <- tibble(x=x1, y=y1)
flower6 <- tibble(x=x2, y=y2)
```

Risanje slik.

```
# creating ggplot objects with correct x and y values
g3 <- ggplot(flower3, aes(x=x, y=y))
g6 <- ggplot(flower6, aes(x=x, y=y))

# adding geometry, theme, title, limits
c3 <- g3 + geom_point(col="#ee82ee") +
  theme_bw() +
  xlim(c(-1, 1)) +
  ylim(c(-1, 1))  +
  ggtitle("Trilistni cvet\n") +
  theme(plot.title = element_text(hjust = 0.5),
        panel.grid = element_blank())
c3
```




```
c6 <- g6 + geom_polygon(fill="red",
                  colour="black",
                  size=1.5) +
  theme_bw() +
  xlim(c(-1, 1)) +
  ylim(c(-1, 1))  +
  ggtitle("Šestlistni cvet\n") +
  theme(plot.title = element_text(hjust = 0.5),
        panel.grid = element_blank())
c6
```



Združevanje slik v eno sliko.

```
# only using cowplot for combining plots generated in ggplot
plot_grid(c3,
          c6,
          nrow = 1)
```