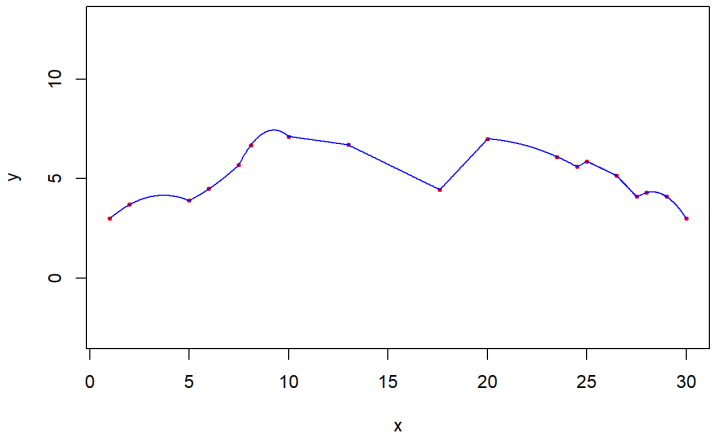
6.Reconstruir la silueta del perrito utilizando la menor cantidad de puntos para reproducir el dibujo del contorno completo del perrito sin bigotes, con la información dada:

```
library(PolynomF)


require(PolynomF)



x=c(1,2,5,6,7.5,8.1,10,13,17.6,20,23.5,24.5,25,26.5,27.5,28,29,30)

y=c(3,3.7,3.9,4.5,5.7,6.69,7.12,6.7,4.45,7,6.1,5.6,5.87,5.15,4.1,4.3,4.1,
3) # se definen los puntos que seran graficados en la grafica

plot(x,y, pch=19, cex=0.5, col = "red", asp=1)

i= 1

Minimos = i

Maximos = i+1

bool = 0

cont = 1


repeat

{

  m = (y[i+1]-y[i])/(x[i+1]-x[i])#

  cont = cont +1

  if (i == 1 && m > 0)

  {

    bool = 1}

  else if(i == 1 && m < 0)

  {

    bool = 0}

  if (m < 0)

  {

    if (bool == 0)

    {

      j = i + 1
```

```
      Maximos= j
      i = j
    }
    else
    {

      datx = x[Minimos:Maximos]; daty = y[Minimos:Maximos]
      polyAjuste = poly_calc(datx, daty)
      cat("bool", bool, "Minimos", Minimos, "Maximos", Maximos, "cont", c
ont-1,"<0\n")
      curve(polyAjuste,from=x[Minimos],to=x[Maximos],add=T, lwd=1,col="bl
ue")
      Minimos = Maximos
      cont = 1
      bool = 0
      i = Maximos
      j = i + 1
      Maximos= j
    }
  }
  else
  {
    if (bool == 0)
    {
      datx = x[Minimos:Maximos]; daty = y[Minimos:Maximos]
      polyAjuste = poly_calc(datx, daty)
      cat("bool", bool, "Minimos", Minimos, "Maximos", Maximos, "cont", c
ont-1,">0\n")
      curve(polyAjuste,from=x[Minimos],to=x[Maximos],add=T, lwd=1,col="bl
ue")
      Minimos = Maximos
      cont = 1
      bool = 1
      i = Maximos
      j = i + 1
      Maximos= j
```

```
    }
    else
    {
      j = i + 1
      Maximos= j
      i = j
    }
  }
  if (cont == 3)
  {
    datx = x[Minimos:Maximos]; daty = y[Minimos:Maximos]
    polyAjuste = poly_calc(datx, daty)
    cat("bool", bool, "Minimos", Minimos, "Maximos", Maximos, "cont", con
t-1,"<>0\n")
    curve(polyAjuste,from=x[Minimos],to=x[Maximos],add=T, lwd=1,col="blue
")
    Minimos = Maximos
    cont = 1
    i = Maximos
    j = i + 1
    Maximos= j

    if(m < 0)
    {
      bool = 0
    }
    else
    {
      bool = 1
    }
  }

  if (i==length(x))
  {
    Maximos = i
```

```
    datx = x[Minimos:Maximos]; daty = y[Minimos:Maximos]

    polyAjuste = poly_calc(datx, daty)

    cat("bool", bool, "Minimos", Minimos, "Maximos", Maximos, "cont", con
t-1,"<>0\n")

    curve(polyAjuste,from=x[Minimos],to=x[Maximos],add=T, lwd=1,col="blue
")

    break;

  }

}
```




```
## bool 1 Minimos 1 Maximos 3 cont 2 <>0

## bool 1 Minimos 3 Maximos 5 cont 2 <>0

## bool 1 Minimos 5 Maximos 7 cont 2 <>0

## bool 1 Minimos 7 Maximos 8 cont 1 <0

## bool 0 Minimos 8 Maximos 9 cont 2 >0

## bool 1 Minimos 9 Maximos 10 cont 2 <0

## bool 0 Minimos 10 Maximos 12 cont 2 <>0

## bool 0 Minimos 12 Maximos 13 cont 1 >0

## bool 1 Minimos 13 Maximos 14 cont 1 <0

## bool 0 Minimos 14 Maximos 15 cont 2 >0

## bool 1 Minimos 15 Maximos 16 cont 2 <0

## bool 0 Minimos 16 Maximos 18 cont 2 <>0

## bool 0 Minimos 18 Maximos 18 cont 0 <>0
```