

R Notebook

```
library(english)
source("C:\\xampp\\htdocs\\TacticalDataDrivenDecisionSystem\\r_library\\ch2.r")
source("C:\\xampp\\htdocs\\TacticalDataDrivenDecisionSystem\\r_library\\ch3.r")
source("C:\\xampp\\htdocs\\TacticalDataDrivenDecisionSystem\\r_library\\ch4.r")

knitr:::opts_chunk$set(fig.path = "./forecasting/")

# Load required packages
library(RMySQL)
```

```
## Loading required package: DBI
```

```
library(ggplot2)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library(tidyr)
library(lubridate)
```

```
##
## Attaching package: 'lubridate'
```

```
## The following objects are masked from 'package:base':
##
##     date, intersect, setdiff, union
```

```
library(ggpubr)

# Database connection
con <- dbConnect(MySQL(),
                  user = "root",           # Replace with your MySQL username
                  password = "",           # Replace with your MySQL password
                  dbname = "pcc_forecast_db",
                  host = "127.0.0.1")

# Convert all matrix text to float
matrix_to_float <- function(mat) {
  # Convert matrix to numeric vector and then back to matrix
  numeric_data <- as.numeric(mat)
  # Restore matrix dimensions
  matrix(numeric_data, nrow = nrow(mat), ncol = ncol(mat),
         dimnames = dimnames(mat))
}

# Replace non-numeric values with NA or a default number (e.g., 0)
matrix_to_float_safe <- function(mat) {
  # Convert elements to numeric, suppress warnings
  numeric_data <- suppressWarnings(as.numeric(mat))
  # Restore matrix structure
  matrix(numeric_data, nrow = nrow(mat), ncol = ncol(mat),
         dimnames = dimnames(mat))
}
```

```

ticket_func <- function(year_) {
  ticket_data <- dbGetQuery(con, paste0("
SELECT
  concat(
    DATE_FORMAT(STR_TO_DATE(CONCAT(year, '- ',month,'-01'), '%Y-%M-%d'), '%Y')+
    DATE_FORMAT(STR_TO_DATE(CONCAT(year, '- ',month,'-01'), '%Y-%M-%d'), '%m')/12-(1/24)
  )
  x
 ,TicketSell y
FROM htaticketing
WHERE 1=1
  AND DATE_FORMAT(STR_TO_DATE(CONCAT(year, '- ',month,'-01'), '%Y-%M-%d'), '%Y-%m') < DATE_FORMAT(NOW(), '%Y-%m')
  AND year=",year_,"
order by DATE_FORMAT(STR_TO_DATE(CONCAT(year, '- ',month,'-01'), '%Y-%M-%d'), '%Y-%m') asc
;
"
)
)
ticket_data
A=matrix_data <- as.matrix(ticket_data)
A <- matrix_to_float_safe(A)
A
f = lagrange(A)
print(f)
curve(f,year_+0.00,year_+0.99)      # Note that you can plot the Lagrange polynomial easily on R
}
ticket_func(2010)

```

```

## 
## Attaching package: 'MASS'

```

```

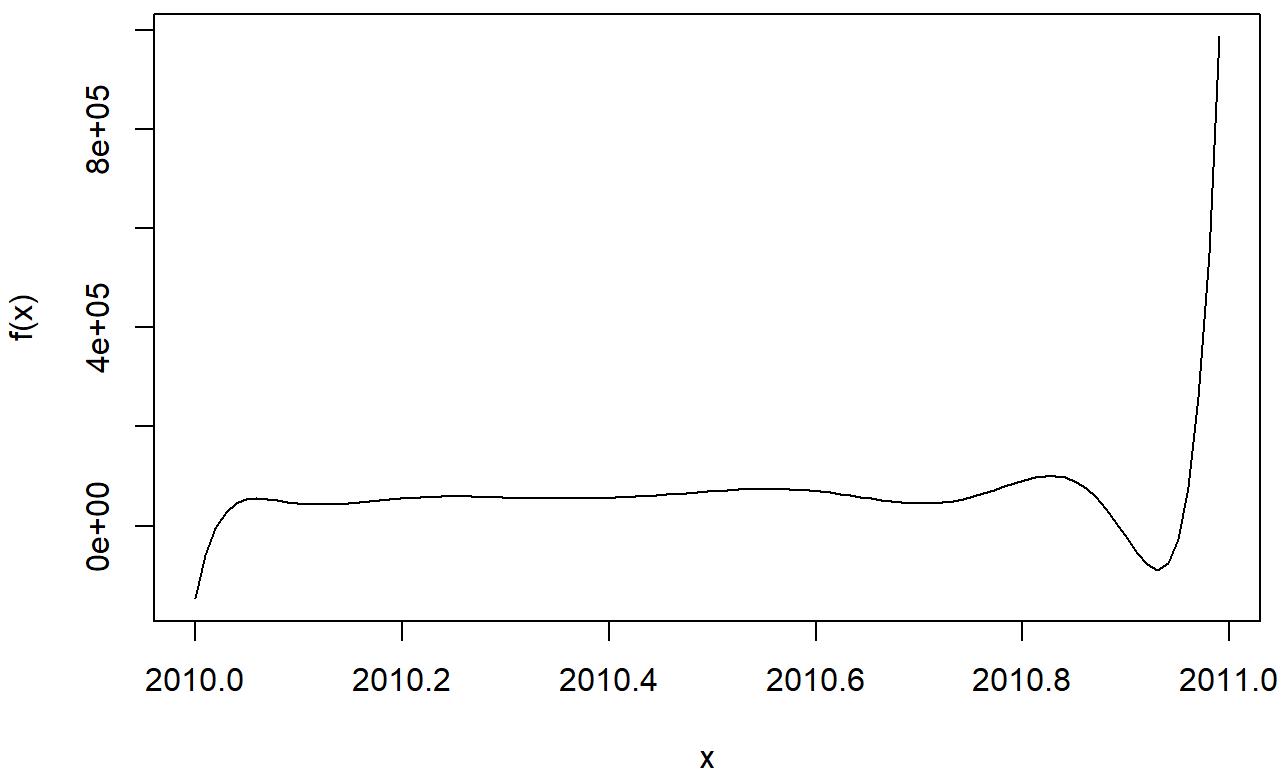
## The following object is masked from 'package:dplyr':
##
##     select

```

```

## function (x)
## -64883809816825/73087 * (x - 2010.125) * (x - 2010.2083) * (x -
##   2010.2917) * (x - 2010.375) * (x - 2010.4583) * (x - 2010.5417) *
##   (x - 2010.625) * (x - 2010.7083) * (x - 2010.7917) * (x -
##   2010.875) * (x - 2010.9583) + 573602896214809/65536 * (x -
##   2010.0417) * (x - 2010.2083) * (x - 2010.2917) * (x - 2010.375) *
##   (x - 2010.4583) * (x - 2010.5417) * (x - 2010.625) * (x -
##   2010.7083) * (x - 2010.7917) * (x - 2010.875) * (x - 2010.9583) +
##   -990587072596195/17142 * (x - 2010.0417) * (x - 2010.125) *
##   (x - 2010.2917) * (x - 2010.375) * (x - 2010.4583) *
##   (x - 2010.5417) * (x - 2010.625) * (x - 2010.7083) *
##   (x - 2010.7917) * (x - 2010.875) * (x - 2010.9583) +
##   5646225132199/32 * (x - 2010.0417) * (x - 2010.125) * (x -
##   2010.2083) * (x - 2010.375) * (x - 2010.4583) * (x -
##   2010.5417) * (x - 2010.625) * (x - 2010.7083) * (x -
##   2010.7917) * (x - 2010.875) * (x - 2010.9583) + -530951287911770/1571 *
##   (x - 2010.0417) * (x - 2010.125) * (x - 2010.2083) * (x -
##   2010.2917) * (x - 2010.4583) * (x - 2010.5417) * (x - 2010.625) *
##   (x - 2010.7083) * (x - 2010.7917) * (x - 2010.875) * (x -
##   2010.9583) + 8943408747700691/16384 * (x - 2010.0417) * (x -
##   2010.125) * (x - 2010.2083) * (x - 2010.2917) * (x - 2010.375) *
##   (x - 2010.5417) * (x - 2010.625) * (x - 2010.7083) * (x -
##   2010.7917) * (x - 2010.875) * (x - 2010.9583) + -5225686879828829/8192 *
##   (x - 2010.0417) * (x - 2010.125) * (x - 2010.2083) * (x -
##   2010.2917) * (x - 2010.375) * (x - 2010.4583) * (x - 2010.625) *
##   (x - 2010.7083) * (x - 2010.7917) * (x - 2010.875) * (x -
##   2010.9583) + 802465625076129/2048 * (x - 2010.0417) * (x -
##   2010.125) * (x - 2010.2083) * (x - 2010.2917) * (x - 2010.375) *
##   (x - 2010.4583) * (x - 2010.5417) * (x - 2010.7083) * (x -
##   2010.7917) * (x - 2010.875) * (x - 2010.9583) + -2309996067303507/16384 *
##   (x - 2010.0417) * (x - 2010.125) * (x - 2010.2083) * (x -
##   2010.2917) * (x - 2010.375) * (x - 2010.4583) * (x - 2010.5417) *
##   (x - 2010.625) * (x - 2010.7917) * (x - 2010.875) * (x -
##   2010.9583) + 359674823612481/4096 * (x - 2010.0417) * (x -
##   2010.125) * (x - 2010.2083) * (x - 2010.2917) * (x - 2010.375) *
##   (x - 2010.4583) * (x - 2010.5417) * (x - 2010.625) * (x -
##   2010.7083) * (x - 2010.875) * (x - 2010.9583) + -527057642489661/53294 *
##   (x - 2010.0417) * (x - 2010.125) * (x - 2010.2083) * (x -
##   2010.2917) * (x - 2010.375) * (x - 2010.4583) * (x - 2010.5417) *
##   (x - 2010.625) * (x - 2010.7083) * (x - 2010.7917) * (x -
##   2010.9583) + 744973082972467/777610 * (x - 2010.0417) * (x -
##   2010.125) * (x - 2010.2083) * (x - 2010.2917) * (x - 2010.375) *
##   (x - 2010.4583) * (x - 2010.5417) * (x - 2010.625) * (x -
##   2010.7083) * (x - 2010.7917) * (x - 2010.875)
## <environment: 0x00000182cbd04d60>

```

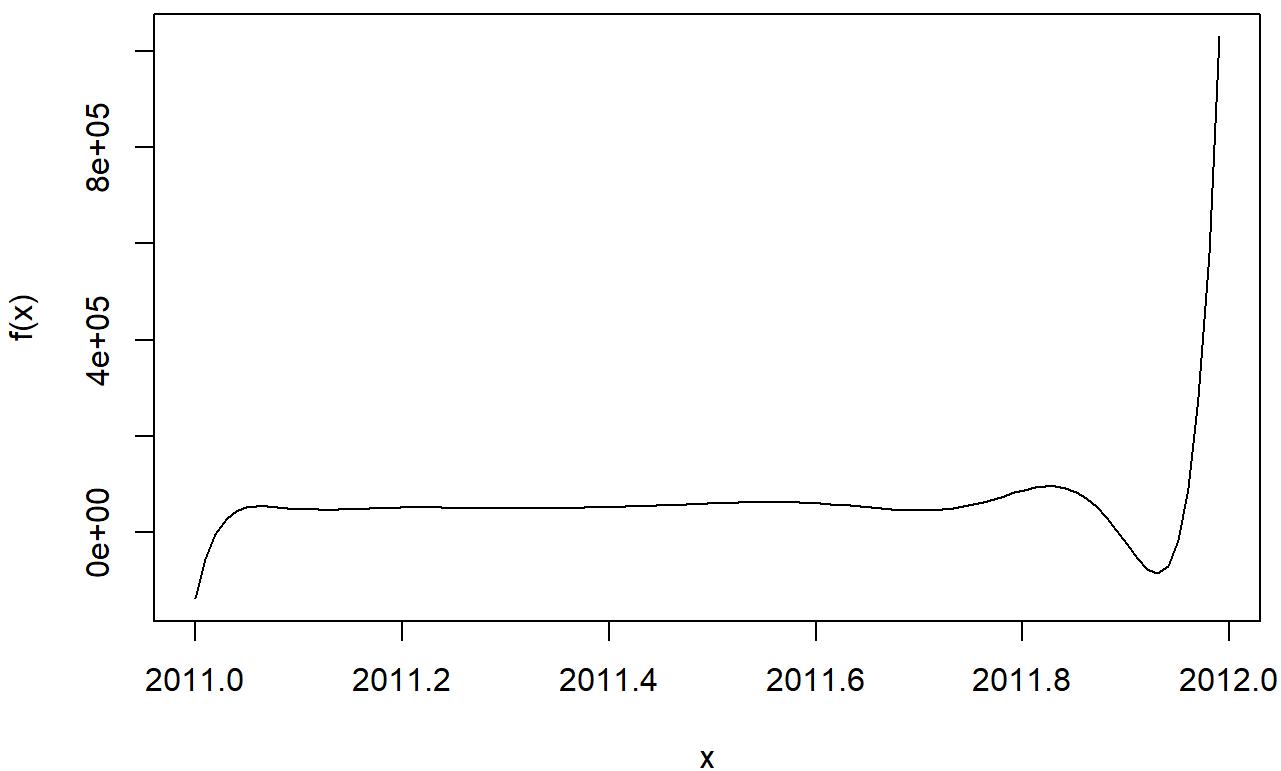


```
ticket_func(2011)
```

```

## function (x)
## -4145515513544/4831 * (x - 2011.125) * (x - 2011.2083) * (x -
##   2011.2917) * (x - 2011.375) * (x - 2011.4583) * (x - 2011.5417) *
##   (x - 2011.625) * (x - 2011.7083) * (x - 2011.7917) * (x -
##   2011.875) * (x - 2011.9583) + 5035588363848795/524288 * (x -
##   2011.0417) * (x - 2011.2083) * (x - 2011.2917) * (x - 2011.375) *
##   (x - 2011.4583) * (x - 2011.5417) * (x - 2011.625) * (x -
##   2011.7083) * (x - 2011.7917) * (x - 2011.875) * (x - 2011.9583) +
##   -6272602591846459/118651 * (x - 2011.0417) * (x - 2011.125) *
##   (x - 2011.2917) * (x - 2011.375) * (x - 2011.4583) *
##   (x - 2011.5417) * (x - 2011.625) * (x - 2011.7083) *
##   (x - 2011.7917) * (x - 2011.875) * (x - 2011.9583) +
##   2505129733700049/16384 * (x - 2011.0417) * (x - 2011.125) *
##   (x - 2011.2083) * (x - 2011.375) * (x - 2011.4583) *
##   (x - 2011.5417) * (x - 2011.625) * (x - 2011.7083) *
##   (x - 2011.7917) * (x - 2011.875) * (x - 2011.9583) +
##   -5181940151388831/16384 * (x - 2011.0417) * (x - 2011.125) *
##   (x - 2011.2083) * (x - 2011.2917) * (x - 2011.4583) *
##   (x - 2011.5417) * (x - 2011.625) * (x - 2011.7083) *
##   (x - 2011.7917) * (x - 2011.875) * (x - 2011.9583) +
##   498927938040643/1024 * (x - 2011.0417) * (x - 2011.125) *
##   (x - 2011.2083) * (x - 2011.2917) * (x - 2011.375) *
##   (x - 2011.5417) * (x - 2011.625) * (x - 2011.7083) *
##   (x - 2011.7917) * (x - 2011.875) * (x - 2011.9583) +
##   -8798317298628699/16384 * (x - 2011.0417) * (x - 2011.125) *
##   (x - 2011.2083) * (x - 2011.2917) * (x - 2011.375) *
##   (x - 2011.4583) * (x - 2011.625) * (x - 2011.7083) *
##   (x - 2011.7917) * (x - 2011.875) * (x - 2011.9583) +
##   2876852860183201/8192 * (x - 2011.0417) * (x - 2011.125) *
##   (x - 2011.2083) * (x - 2011.2917) * (x - 2011.375) *
##   (x - 2011.4583) * (x - 2011.5417) * (x - 2011.7083) *
##   (x - 2011.7917) * (x - 2011.875) * (x - 2011.9583) +
##   -4593819963720709/32768 * (x - 2011.0417) * (x - 2011.125) *
##   (x - 2011.2083) * (x - 2011.2917) * (x - 2011.375) *
##   (x - 2011.4583) * (x - 2011.5417) * (x - 2011.625) *
##   (x - 2011.7917) * (x - 2011.875) * (x - 2011.9583) +
##   923854427004348/10985 * (x - 2011.0417) * (x - 2011.125) *
##   (x - 2011.2083) * (x - 2011.2917) * (x - 2011.375) *
##   (x - 2011.4583) * (x - 2011.5417) * (x - 2011.625) *
##   (x - 2011.7083) * (x - 2011.875) * (x - 2011.9583) +
##   -222301013134111/23961 * (x - 2011.0417) * (x - 2011.125) *
##   (x - 2011.2083) * (x - 2011.2917) * (x - 2011.375) *
##   (x - 2011.4583) * (x - 2011.5417) * (x - 2011.625) *
##   (x - 2011.7083) * (x - 2011.7917) * (x - 2011.9583) +
##   87932180885140/74171 * (x - 2011.0417) * (x - 2011.125) *
##   (x - 2011.2083) * (x - 2011.2917) * (x - 2011.375) *
##   (x - 2011.4583) * (x - 2011.5417) * (x - 2011.625) *
##   (x - 2011.7083) * (x - 2011.7917) * (x - 2011.875)
## <environment: 0x00000182cc031e70>

```

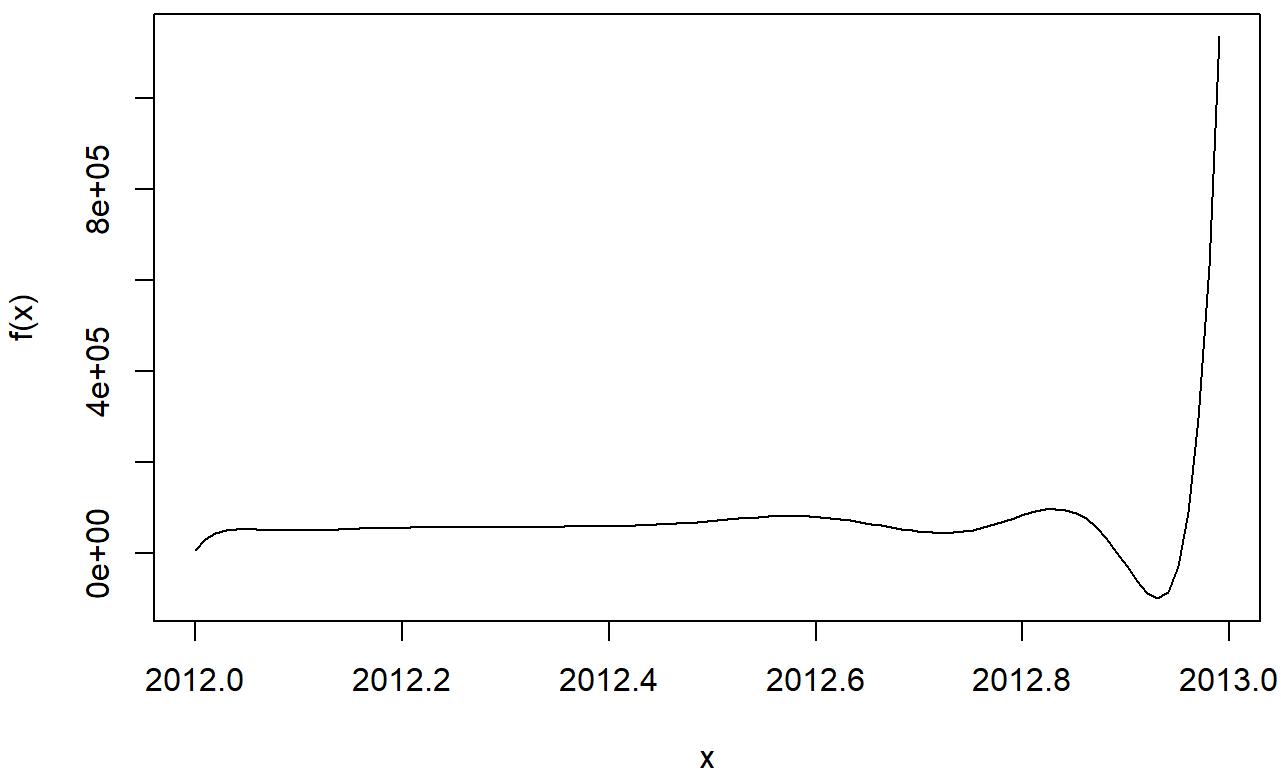


```
ticket_func(2012)
```

```

## function (x)
## -6513926047364/6609 * (x - 2012.125) * (x - 2012.2083) * (x -
##   2012.2917) * (x - 2012.375) * (x - 2012.4583) * (x - 2012.5417) *
##   (x - 2012.625) * (x - 2012.7083) * (x - 2012.7917) * (x -
##   2012.875) * (x - 2012.9583) + 5382559168619399/524288 * (x -
##   2012.0417) * (x - 2012.2083) * (x - 2012.2917) * (x - 2012.375) *
##   (x - 2012.4583) * (x - 2012.5417) * (x - 2012.625) * (x -
##   2012.7083) * (x - 2012.7917) * (x - 2012.875) * (x - 2012.9583) +
##   -1018157086470381/18011 * (x - 2012.0417) * (x - 2012.125) *
##   (x - 2012.2917) * (x - 2012.375) * (x - 2012.4583) *
##   (x - 2012.5417) * (x - 2012.625) * (x - 2012.7083) *
##   (x - 2012.7917) * (x - 2012.875) * (x - 2012.9583) +
##   1412617758039347/8192 * (x - 2012.0417) * (x - 2012.125) *
##   (x - 2012.2083) * (x - 2012.375) * (x - 2012.4583) *
##   (x - 2012.5417) * (x - 2012.625) * (x - 2012.7083) *
##   (x - 2012.7917) * (x - 2012.875) * (x - 2012.9583) +
##   -2913356033616517/8192 * (x - 2012.0417) * (x - 2012.125) *
##   (x - 2012.2083) * (x - 2012.2917) * (x - 2012.4583) *
##   (x - 2012.5417) * (x - 2012.625) * (x - 2012.7083) *
##   (x - 2012.7917) * (x - 2012.875) * (x - 2012.9583) +
##   8930308257638851/16384 * (x - 2012.0417) * (x - 2012.125) *
##   (x - 2012.2083) * (x - 2012.2917) * (x - 2012.375) *
##   (x - 2012.5417) * (x - 2012.625) * (x - 2012.7083) *
##   (x - 2012.7917) * (x - 2012.875) * (x - 2012.9583) +
##   -2757547508903933/4096 * (x - 2012.0417) * (x - 2012.125) *
##   (x - 2012.2083) * (x - 2012.2917) * (x - 2012.375) *
##   (x - 2012.4583) * (x - 2012.625) * (x - 2012.7083) *
##   (x - 2012.7917) * (x - 2012.875) * (x - 2012.9583) +
##   1866671590970319/4096 * (x - 2012.0417) * (x - 2012.125) *
##   (x - 2012.2083) * (x - 2012.2917) * (x - 2012.375) *
##   (x - 2012.4583) * (x - 2012.5417) * (x - 2012.7083) *
##   (x - 2012.7917) * (x - 2012.875) * (x - 2012.9583) +
##   -282885935512449/2048 * (x - 2012.0417) * (x - 2012.125) *
##   (x - 2012.2083) * (x - 2012.2917) * (x - 2012.375) *
##   (x - 2012.4583) * (x - 2012.5417) * (x - 2012.625) *
##   (x - 2012.7917) * (x - 2012.875) * (x - 2012.9583) +
##   354052332402285/4519 * (x - 2012.0417) * (x - 2012.125) *
##   (x - 2012.2083) * (x - 2012.2917) * (x - 2012.375) *
##   (x - 2012.4583) * (x - 2012.5417) * (x - 2012.625) *
##   (x - 2012.7083) * (x - 2012.875) * (x - 2012.9583) +
##   -641076901399495/65536 * (x - 2012.0417) * (x - 2012.125) *
##   (x - 2012.2083) * (x - 2012.2917) * (x - 2012.375) *
##   (x - 2012.4583) * (x - 2012.5417) * (x - 2012.625) *
##   (x - 2012.7083) * (x - 2012.7917) * (x - 2012.9583) +
##   1683758529009/1556 * (x - 2012.0417) * (x - 2012.125) * (x -
##   2012.2083) * (x - 2012.2917) * (x - 2012.375) * (x -
##   2012.4583) * (x - 2012.5417) * (x - 2012.625) * (x -
##   2012.7083) * (x - 2012.7917) * (x - 2012.875)
## <environment: 0x00000182cc53e5b8>

```

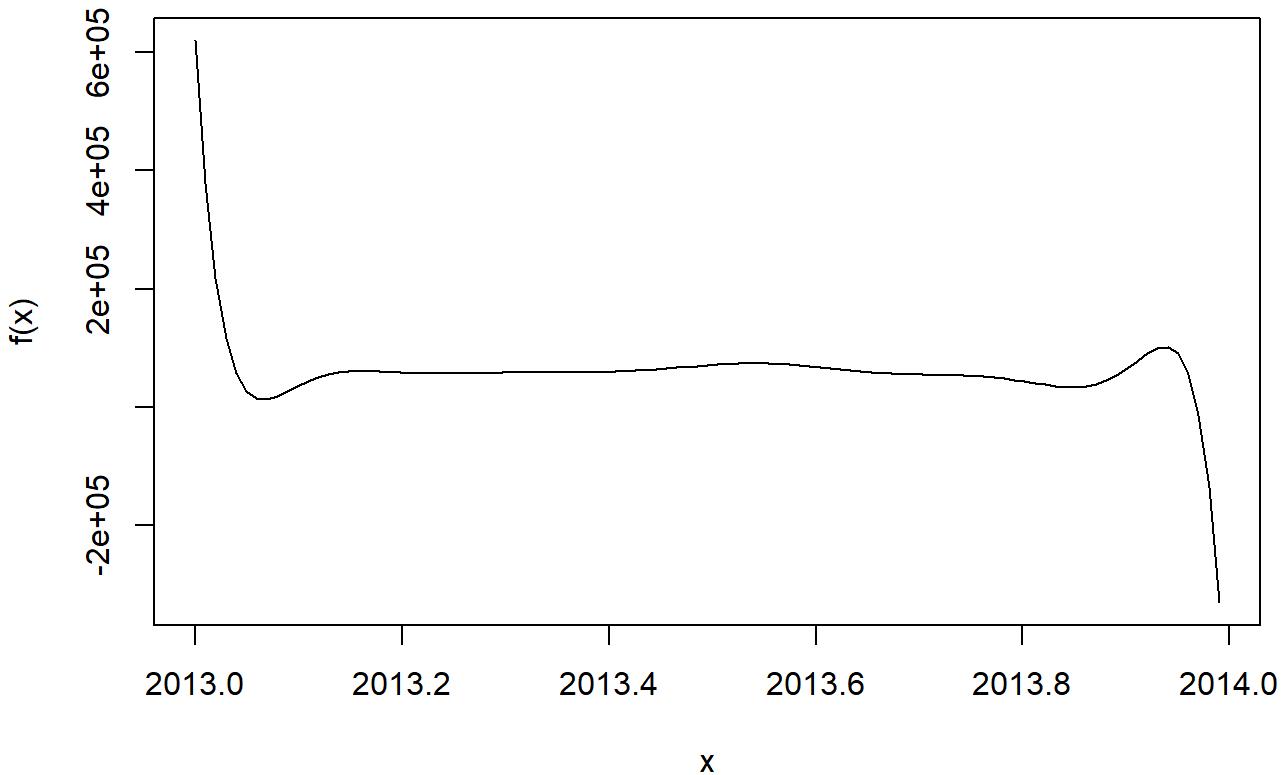


```
ticket_func(2013)
```

```

## function (x)
## -69531477414410/75213 * (x - 2013.125) * (x - 2013.2083) * (x -
##   2013.2917) * (x - 2013.375) * (x - 2013.4583) * (x - 2013.5417) *
##   (x - 2013.625) * (x - 2013.7083) * (x - 2013.7917) * (x -
##   2013.875) * (x - 2013.9583) + 362170918973403/32768 * (x -
##   2013.0417) * (x - 2013.2083) * (x - 2013.2917) * (x - 2013.375) *
##   (x - 2013.4583) * (x - 2013.5417) * (x - 2013.625) * (x -
##   2013.7083) * (x - 2013.7917) * (x - 2013.875) * (x - 2013.9583) +
##   -3903604148929493/65536 * (x - 2013.0417) * (x - 2013.125) *
##   (x - 2013.2917) * (x - 2013.375) * (x - 2013.4583) *
##   (x - 2013.5417) * (x - 2013.625) * (x - 2013.7083) *
##   (x - 2013.7917) * (x - 2013.875) * (x - 2013.9583) +
##   5858036479724925/32768 * (x - 2013.0417) * (x - 2013.125) *
##   (x - 2013.2083) * (x - 2013.375) * (x - 2013.4583) *
##   (x - 2013.5417) * (x - 2013.625) * (x - 2013.7083) *
##   (x - 2013.7917) * (x - 2013.875) * (x - 2013.9583) +
##   -5969703808682163/16384 * (x - 2013.0417) * (x - 2013.125) *
##   (x - 2013.2083) * (x - 2013.2917) * (x - 2013.4583) *
##   (x - 2013.5417) * (x - 2013.625) * (x - 2013.7083) *
##   (x - 2013.7917) * (x - 2013.875) * (x - 2013.9583) +
##   4644616756118181/8192 * (x - 2013.0417) * (x - 2013.125) *
##   (x - 2013.2083) * (x - 2013.2917) * (x - 2013.375) *
##   (x - 2013.5417) * (x - 2013.625) * (x - 2013.7083) *
##   (x - 2013.7917) * (x - 2013.875) * (x - 2013.9583) +
##   -5212022927828845/8192 * (x - 2013.0417) * (x - 2013.125) *
##   (x - 2013.2083) * (x - 2013.2917) * (x - 2013.375) *
##   (x - 2013.4583) * (x - 2013.625) * (x - 2013.7083) *
##   (x - 2013.7917) * (x - 2013.875) * (x - 2013.9583) +
##   6456379221656555/16384 * (x - 2013.0417) * (x - 2013.125) *
##   (x - 2013.2083) * (x - 2013.2917) * (x - 2013.375) *
##   (x - 2013.4583) * (x - 2013.5417) * (x - 2013.7083) *
##   (x - 2013.7917) * (x - 2013.875) * (x - 2013.9583) +
##   -97476373003042/579 * (x - 2013.0417) * (x - 2013.125) *
##   (x - 2013.2083) * (x - 2013.2917) * (x - 2013.375) *
##   (x - 2013.4583) * (x - 2013.5417) * (x - 2013.625) *
##   (x - 2013.7917) * (x - 2013.875) * (x - 2013.9583) +
##   6230854641126091/131072 * (x - 2013.0417) * (x - 2013.125) *
##   (x - 2013.2083) * (x - 2013.2917) * (x - 2013.375) *
##   (x - 2013.4583) * (x - 2013.5417) * (x - 2013.625) *
##   (x - 2013.7083) * (x - 2013.875) * (x - 2013.9583) +
##   -866491703998111/101665 * (x - 2013.0417) * (x - 2013.125) *
##   (x - 2013.2083) * (x - 2013.2917) * (x - 2013.375) *
##   (x - 2013.4583) * (x - 2013.5417) * (x - 2013.625) *
##   (x - 2013.7083) * (x - 2013.7917) * (x - 2013.9583) +
##   1320645932610724/1080651 * (x - 2013.0417) * (x - 2013.125) *
##   (x - 2013.2083) * (x - 2013.2917) * (x - 2013.375) *
##   (x - 2013.4583) * (x - 2013.5417) * (x - 2013.625) *
##   (x - 2013.7083) * (x - 2013.7917) * (x - 2013.875)
## <environment: 0x00000182cb423460>

```



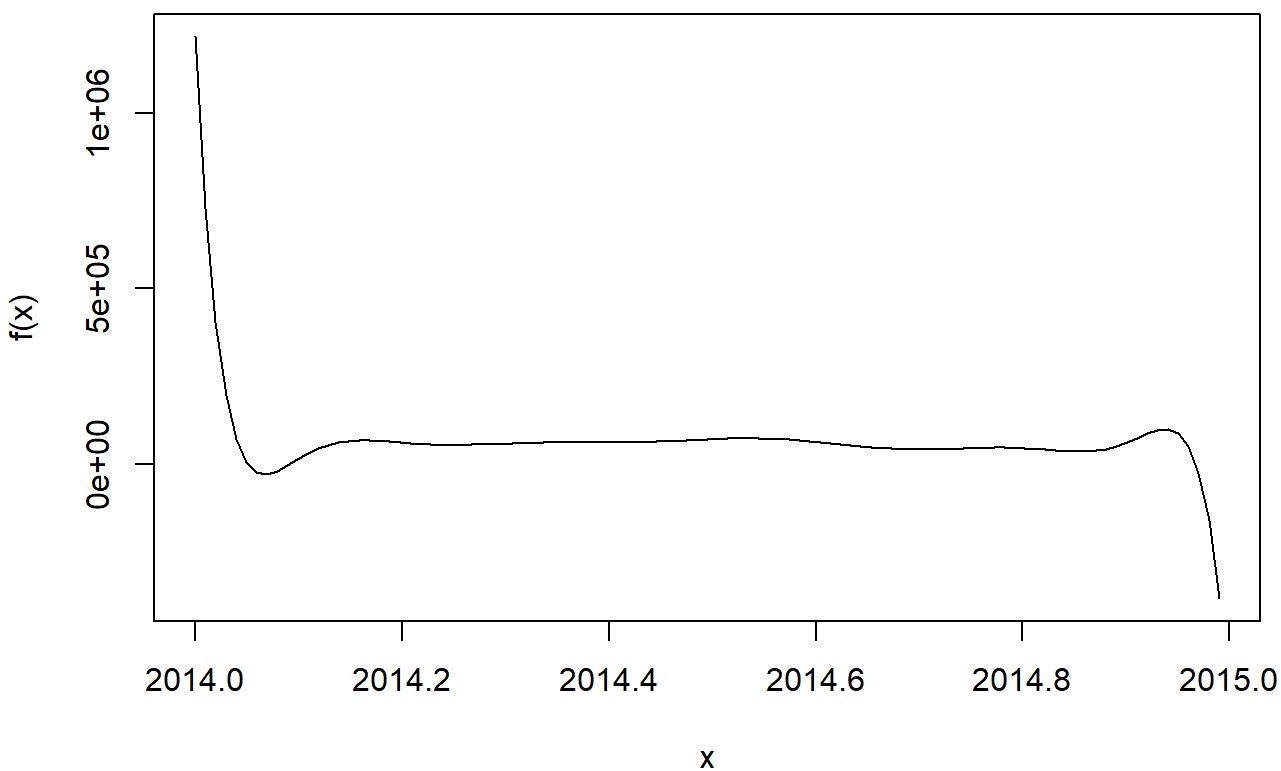
```
ticket_func(2014)
```

```

## function (x)
## -142421577126277/145206 * (x - 2014.125) * (x - 2014.2083) *
## (x - 2014.2917) * (x - 2014.375) * (x - 2014.4583) * (x -
## 2014.5417) * (x - 2014.625) * (x - 2014.7083) * (x - 2014.7917) *
## (x - 2014.875) * (x - 2014.9583) + 6274497685500/607 * (x -
## 2014.0417) * (x - 2014.2083) * (x - 2014.2917) * (x - 2014.375) *
## (x - 2014.4583) * (x - 2014.5417) * (x - 2014.625) * (x -
## 2014.7083) * (x - 2014.7917) * (x - 2014.875) * (x - 2014.9583) +
## -117483501931093/1969 * (x - 2014.0417) * (x - 2014.125) *
## (x - 2014.2917) * (x - 2014.375) * (x - 2014.4583) *
## (x - 2014.5417) * (x - 2014.625) * (x - 2014.7083) *
## (x - 2014.7917) * (x - 2014.875) * (x - 2014.9583) +
## 2848991794267801/16384 * (x - 2014.0417) * (x - 2014.125) *
## (x - 2014.2083) * (x - 2014.375) * (x - 2014.4583) *
## (x - 2014.5417) * (x - 2014.625) * (x - 2014.7083) *
## (x - 2014.7917) * (x - 2014.875) * (x - 2014.9583) +
## -3054837298923577/8192 * (x - 2014.0417) * (x - 2014.125) *
## (x - 2014.2083) * (x - 2014.2917) * (x - 2014.4583) *
## (x - 2014.5417) * (x - 2014.625) * (x - 2014.7083) *
## (x - 2014.7917) * (x - 2014.875) * (x - 2014.9583) +
## 1141644319421321/2048 * (x - 2014.0417) * (x - 2014.125) *
## (x - 2014.2083) * (x - 2014.2917) * (x - 2014.375) *
## (x - 2014.5417) * (x - 2014.625) * (x - 2014.7083) *
## (x - 2014.7917) * (x - 2014.875) * (x - 2014.9583) +
## -5090244716447547/8192 * (x - 2014.0417) * (x - 2014.125) *
## (x - 2014.2083) * (x - 2014.2917) * (x - 2014.375) *
## (x - 2014.4583) * (x - 2014.625) * (x - 2014.7083) *
## (x - 2014.7917) * (x - 2014.875) * (x - 2014.9583) +
## 695448390410593/2048 * (x - 2014.0417) * (x - 2014.125) *
## (x - 2014.2083) * (x - 2014.2917) * (x - 2014.375) *
## (x - 2014.4583) * (x - 2014.5417) * (x - 2014.7083) *
## (x - 2014.7917) * (x - 2014.875) * (x - 2014.9583) +
## -638423655723947/5057 * (x - 2014.0417) * (x - 2014.125) *
## (x - 2014.2083) * (x - 2014.2917) * (x - 2014.375) *
## (x - 2014.4583) * (x - 2014.5417) * (x - 2014.625) *
## (x - 2014.7917) * (x - 2014.875) * (x - 2014.9583) +
## 6089914811842699/131072 * (x - 2014.0417) * (x - 2014.125) *
## (x - 2014.2083) * (x - 2014.2917) * (x - 2014.375) *
## (x - 2014.4583) * (x - 2014.5417) * (x - 2014.625) *
## (x - 2014.7083) * (x - 2014.875) * (x - 2014.9583) +
## -254347137052152/31379 * (x - 2014.0417) * (x - 2014.125) *
## (x - 2014.2083) * (x - 2014.2917) * (x - 2014.375) *
## (x - 2014.4583) * (x - 2014.5417) * (x - 2014.625) *
## (x - 2014.7083) * (x - 2014.7917) * (x - 2014.9583) +
## 778258178732086/688435 * (x - 2014.0417) * (x - 2014.125) *
## (x - 2014.2083) * (x - 2014.2917) * (x - 2014.375) *
## (x - 2014.4583) * (x - 2014.5417) * (x - 2014.625) *
## (x - 2014.7083) * (x - 2014.7917) * (x - 2014.875)

## <environment: 0x00000182c9fbe318>

```



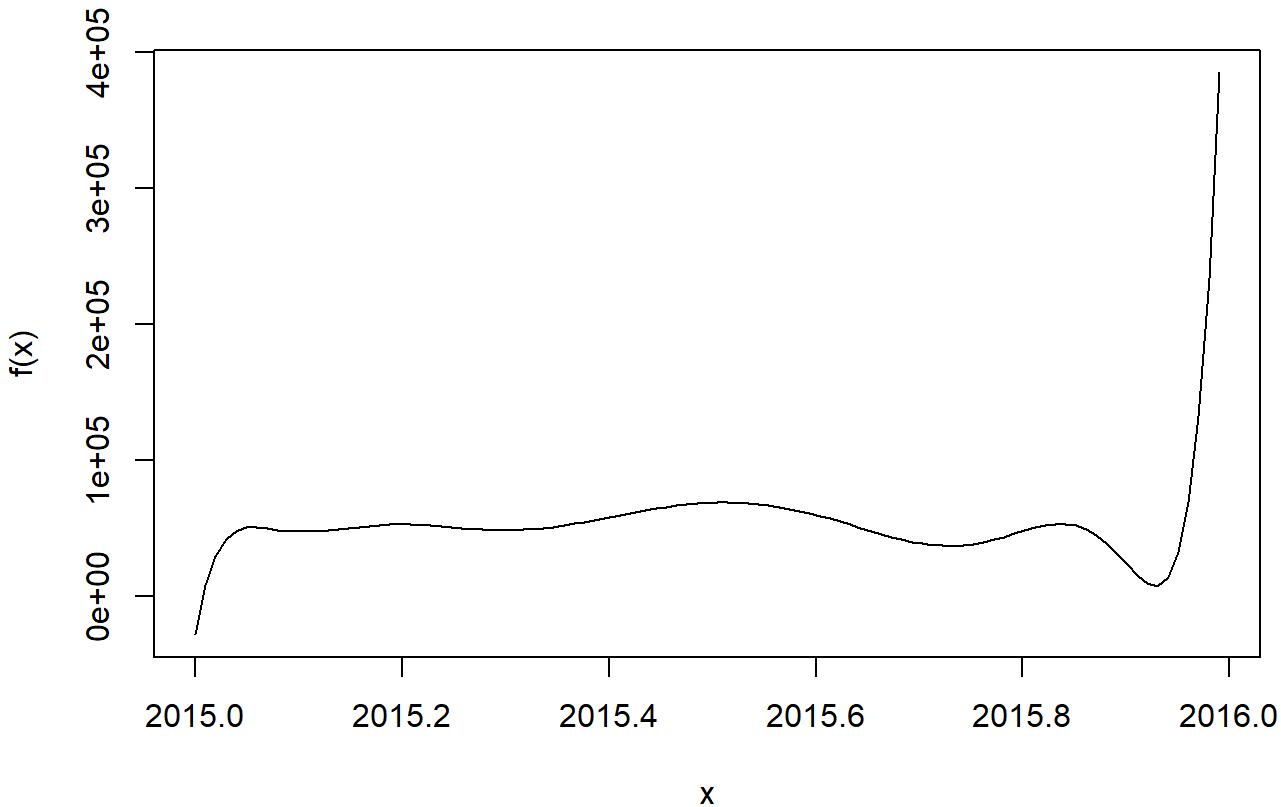
```
ticket_func(2015)
```

```

## function (x)
## -28108988521046/30775 * (x - 2015.125) * (x - 2015.2083) * (x -
##   2015.2917) * (x - 2015.375) * (x - 2015.4583) * (x - 2015.5417) *
##   (x - 2015.625) * (x - 2015.7083) * (x - 2015.7917) * (x -
##   2015.875) * (x - 2015.9583) + 56103998185517/5660 * (x -
##   2015.0417) * (x - 2015.2083) * (x - 2015.2917) * (x - 2015.375) *
##   (x - 2015.4583) * (x - 2015.5417) * (x - 2015.625) * (x -
##   2015.7083) * (x - 2015.7917) * (x - 2015.875) * (x - 2015.9583) +
##   -630449481272382/11653 * (x - 2015.0417) * (x - 2015.125) *
##   (x - 2015.2917) * (x - 2015.375) * (x - 2015.4583) *
##   (x - 2015.5417) * (x - 2015.625) * (x - 2015.7083) *
##   (x - 2015.7917) * (x - 2015.875) * (x - 2015.9583) +
##   4929629048631137/32768 * (x - 2015.0417) * (x - 2015.125) *
##   (x - 2015.2083) * (x - 2015.375) * (x - 2015.4583) *
##   (x - 2015.5417) * (x - 2015.625) * (x - 2015.7083) *
##   (x - 2015.7917) * (x - 2015.875) * (x - 2015.9583) +
##   -5506390426705093/16384 * (x - 2015.0417) * (x - 2015.125) *
##   (x - 2015.2083) * (x - 2015.2917) * (x - 2015.4583) *
##   (x - 2015.5417) * (x - 2015.625) * (x - 2015.7083) *
##   (x - 2015.7917) * (x - 2015.875) * (x - 2015.9583) +
##   4661027585066615/8192 * (x - 2015.0417) * (x - 2015.125) *
##   (x - 2015.2083) * (x - 2015.2917) * (x - 2015.375) *
##   (x - 2015.5417) * (x - 2015.625) * (x - 2015.7083) *
##   (x - 2015.7917) * (x - 2015.875) * (x - 2015.9583) +
##   -4789285608736565/8192 * (x - 2015.0417) * (x - 2015.125) *
##   (x - 2015.2083) * (x - 2015.2917) * (x - 2015.375) *
##   (x - 2015.4583) * (x - 2015.625) * (x - 2015.7083) *
##   (x - 2015.7917) * (x - 2015.875) * (x - 2015.9583) +
##   906749006096641/2691 * (x - 2015.0417) * (x - 2015.125) *
##   (x - 2015.2083) * (x - 2015.2917) * (x - 2015.375) *
##   (x - 2015.4583) * (x - 2015.5417) * (x - 2015.7083) *
##   (x - 2015.7917) * (x - 2015.875) * (x - 2015.9583) +
##   -1627258613965462/13827 * (x - 2015.0417) * (x - 2015.125) *
##   (x - 2015.2083) * (x - 2015.2917) * (x - 2015.375) *
##   (x - 2015.4583) * (x - 2015.5417) * (x - 2015.625) *
##   (x - 2015.7917) * (x - 2015.875) * (x - 2015.9583) +
##   180338593096773/3818 * (x - 2015.0417) * (x - 2015.125) *
##   (x - 2015.2083) * (x - 2015.2917) * (x - 2015.375) *
##   (x - 2015.4583) * (x - 2015.5417) * (x - 2015.625) *
##   (x - 2015.7083) * (x - 2015.875) * (x - 2015.9583) +
##   -1147501201009531/131072 * (x - 2015.0417) * (x - 2015.125) *
##   (x - 2015.2083) * (x - 2015.2917) * (x - 2015.375) *
##   (x - 2015.4583) * (x - 2015.5417) * (x - 2015.625) *
##   (x - 2015.7083) * (x - 2015.7917) * (x - 2015.9583) +
##   2339584382312441/2097152 * (x - 2015.0417) * (x - 2015.125) *
##   (x - 2015.2083) * (x - 2015.2917) * (x - 2015.375) *
##   (x - 2015.4583) * (x - 2015.5417) * (x - 2015.625) *
##   (x - 2015.7083) * (x - 2015.7917) * (x - 2015.875)

## <environment: 0x00000182c82af6c8>

```

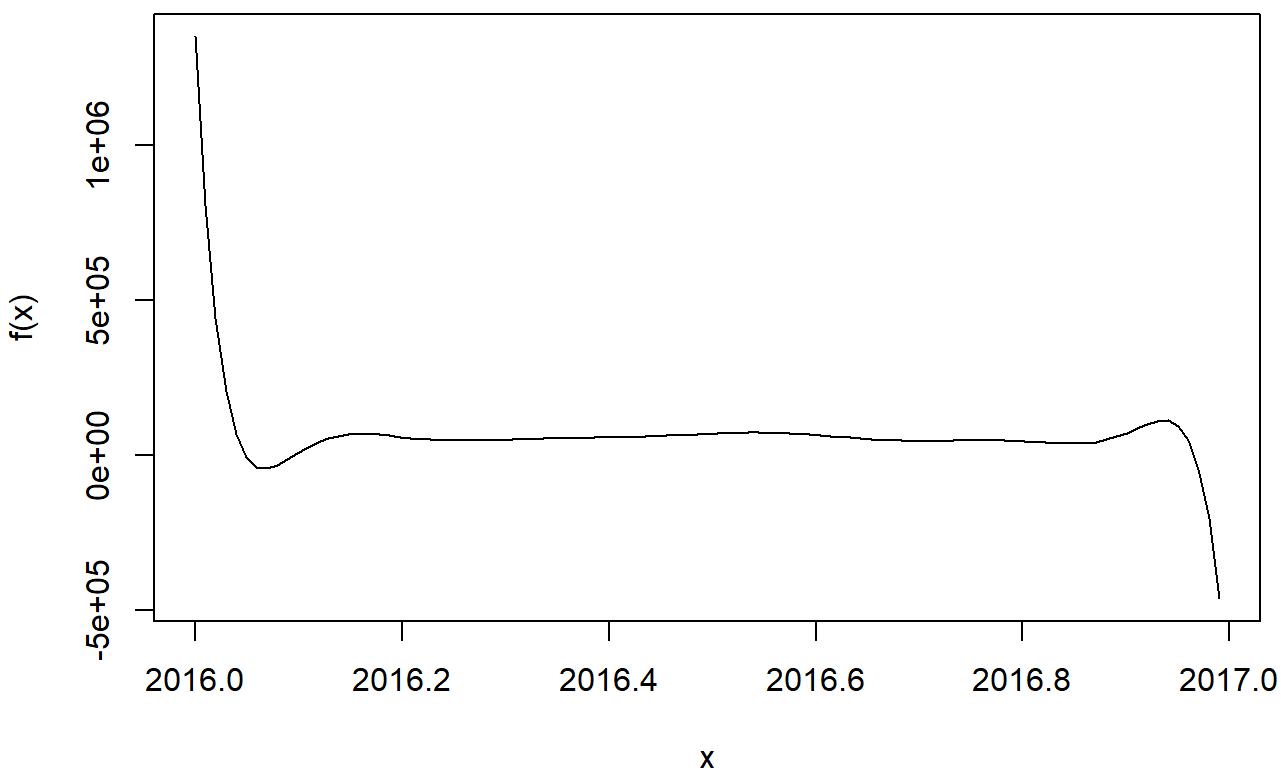


```
ticket_func(2016)
```

```

## function (x)
## -174613338822342/193229 * (x - 2016.125) * (x - 2016.2083) *
## (x - 2016.2917) * (x - 2016.375) * (x - 2016.4583) * (x -
## 2016.5417) * (x - 2016.625) * (x - 2016.7083) * (x - 2016.7917) *
## (x - 2016.875) * (x - 2016.9583) + 159499511056031/15194 *
## (x - 2016.0417) * (x - 2016.2083) * (x - 2016.2917) * (x -
## 2016.375) * (x - 2016.4583) * (x - 2016.5417) * (x - 2016.625) *
## (x - 2016.7083) * (x - 2016.7917) * (x - 2016.875) * (x -
## 2016.9583) + -227183806627511/3910 * (x - 2016.0417) * (x -
## 2016.125) * (x - 2016.2917) * (x - 2016.375) * (x - 2016.4583) *
## (x - 2016.5417) * (x - 2016.625) * (x - 2016.7083) * (x -
## 2016.7917) * (x - 2016.875) * (x - 2016.9583) + 2630320810232814/17227 *
## (x - 2016.0417) * (x - 2016.125) * (x - 2016.2083) * (x -
## 2016.375) * (x - 2016.4583) * (x - 2016.5417) * (x - 2016.625) *
## (x - 2016.7083) * (x - 2016.7917) * (x - 2016.875) * (x -
## 2016.9583) + -4415010050967506/12583 * (x - 2016.0417) *
## (x - 2016.125) * (x - 2016.2083) * (x - 2016.2917) * (x -
## 2016.4583) * (x - 2016.5417) * (x - 2016.625) * (x - 2016.7083) *
## (x - 2016.7917) * (x - 2016.875) * (x - 2016.9583) + 566701844287985/1024 *
## (x - 2016.0417) * (x - 2016.125) * (x - 2016.2083) * (x -
## 2016.2917) * (x - 2016.375) * (x - 2016.5417) * (x - 2016.625) *
## (x - 2016.7083) * (x - 2016.7917) * (x - 2016.875) * (x -
## 2016.9583) + -5195682531622679/8192 * (x - 2016.0417) * (x -
## 2016.125) * (x - 2016.2083) * (x - 2016.2917) * (x - 2016.375) *
## (x - 2016.4583) * (x - 2016.625) * (x - 2016.7083) * (x -
## 2016.7917) * (x - 2016.875) * (x - 2016.9583) + 1503452428007639/4096 *
## (x - 2016.0417) * (x - 2016.125) * (x - 2016.2083) * (x -
## 2016.2917) * (x - 2016.375) * (x - 2016.4583) * (x - 2016.5417) *
## (x - 2016.7083) * (x - 2016.7917) * (x - 2016.875) * (x -
## 2016.9583) + -2725640638231871/18987 * (x - 2016.0417) *
## (x - 2016.125) * (x - 2016.2083) * (x - 2016.2917) * (x -
## 2016.375) * (x - 2016.4583) * (x - 2016.5417) * (x - 2016.625) *
## (x - 2016.7917) * (x - 2016.875) * (x - 2016.9583) + 242736477138213/4988 *
## (x - 2016.0417) * (x - 2016.125) * (x - 2016.2083) * (x -
## 2016.2917) * (x - 2016.375) * (x - 2016.4583) * (x - 2016.5417) *
## (x - 2016.625) * (x - 2016.7083) * (x - 2016.875) * (x -
## 2016.9583) + -21744909370255/2278 * (x - 2016.0417) * (x -
## 2016.125) * (x - 2016.2083) * (x - 2016.2917) * (x - 2016.375) *
## (x - 2016.4583) * (x - 2016.5417) * (x - 2016.625) * (x -
## 2016.7083) * (x - 2016.7917) * (x - 2016.9583) + 2401695512454027/2097152 *
## (x - 2016.0417) * (x - 2016.125) * (x - 2016.2083) * (x -
## 2016.2917) * (x - 2016.375) * (x - 2016.4583) * (x - 2016.5417) *
## (x - 2016.625) * (x - 2016.7083) * (x - 2016.7917) * (x -
## 2016.875)
## <environment: 0x00000182cb1ac3c0>

```



```
# Disconnect from database  
dbDisconnect(con)
```

```
## [1] TRUE
```