DaigleInClassLabWk7D1.R

2011home

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```
## Chris Daigle
## Wk7D1 Inclass Lab

# Exercise 1 #####################################################################


setwd("/Users/2011home/Library/Mobile Documents/com~apple~CloudDocs/Education/UConn/Spring 2018/R/DataS
rev_exp0 <- read.csv("district_rev_exp.csv", na.strings = "-")
head(rev_exp0)
```

```
##        STATE ENROLL                                NAME YRDATA TOTALREV
## 1 California   4041               ALAMEDA CO OFFICE OF ED   2013    50113
## 2 California      2         ALPINE COUNTY SPECIAL SCHOOLS   2013       NA
## 3 California    300    AMADOR CO SPL SCHS OPER BY CO SUPT   2013       NA
## 4 California   1060     BUTTE CO SPL SCHS OPER BY CO SUPT   2013    63918
## 5 California    588 CALAVERAS CO SPL SCHS OPER BY CO SUPT   2013    11750
## 6 California     28     COLUSA COUNTY OFFICE OF EDUCATION   2013    12547
##   TFEDREV TSTREV TLOCREV TOTALEXP TCURINST TCURSSVC TCURONON TCAPOUT
## 1    4650     NA   30271    43242    14096    27582     1478      86
## 2     302     NA     373     1381      133      586       86       7
## 3    1211   6049    3553     9914     5366     3736      418     231
## 4   27769  20704   15445    66483    15692    36339     1329    1772
## 5    1927   7995    1828    13822     5454     5846      679       9
## 6    3854   5405    3288    21834     5378     4984     1566    9806
```

```
# Calculate the 20% trimmed mean of "TOTALREV" for each state

calMean <- mean(rev_exp0$TOTALREV[rev_exp0$STATE == "California"], trim = 0.2, na.rm = TRUE)
conMean <- mean(rev_exp0$TOTALREV[rev_exp0$STATE == "Connecticut"], trim = 0.2, na.rm = TRUE)
massMean <- mean(rev_exp0$TOTALREV[rev_exp0$STATE == "Massachusetts"], trim = 0.2, na.rm = TRUE)
missMean <- mean(rev_exp0$TOTALREV[rev_exp0$STATE == "Missouri"], trim = 0.2, na.rm = TRUE)
cat("The 20% trimmed mean of California is: $", round(calMean, 2))
```

```
## The 20% trimmed mean of California is: $ 24873.73
```

```
cat("The 20% trimmed mean of Connecticut is: $", round(conMean, 2))
```

```
## The 20% trimmed mean of Connecticut is: $ 39990.24
```

```
cat("The 20% trimmed mean of Massachusetts is: $", round(massMean, 2))
```

```
## The 20% trimmed mean of Massachusetts is: $ 33784.9
```

```
cat("The 20% trimmed mean of Missouri is: $", round(missMean, 2))
```

```
## The 20% trimmed mean of Missouri is: $ 7160.47
```

```
meanRevByState <- aggregate(rev_exp0[, "TOTALREV"], list(rev_exp0$STATE), mean, na.rm = TRUE, trim = 0.1
meanRevByState
```

```
##         Group.1         x
```

```
## 1    California 24873.727
## 2   Connecticut 39990.236
## 3 Massachusetts 33784.898
## 4      Missouri  7160.468
```

```
# Exercise 2 ###########################################################################


simpFun <- function(x, y) {
  intOut <- (x + y)
  if (intOut == 0) {
    return(0)
  } else {
    return((x + y) - 1 / (x + y))
  }
}

simpFun(1,7)
```

```
## [1] 7.875
```

```
simpFun(0,0)
```

```
## [1] 0
```

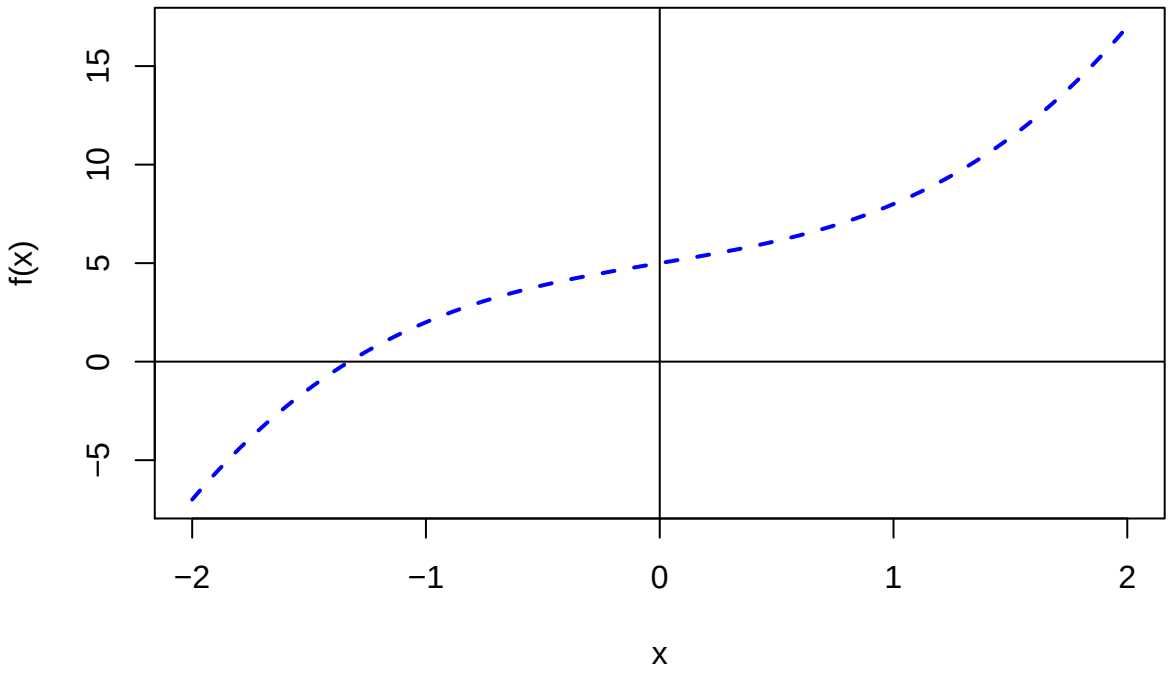
```
# Exercise 3 ###########################################################################


fun <- function(x) {
  y <- x ^ 3 + 2 * x + 5
}

fun_der <- function(x) {
  yder <- 3 * x ^ 2 + 2
}

curve(fun, xlim = c(-2,2), col = 'blue', lwd = 2, lty = 2, ylab = 'f(x)')

abline(h = 0)
abline(v = 0)
```




```
nr <- function(fun, fun_der, int) {
  x <- c(int - 5, int)
  i <- 2
  while (abs(x[i] - x[i-1])>0.0001) {
    x[i + 1] <- x[i] - (fun(x[i]))/(fun_der(x[i]))
    i <- i + 1
  }
  x[i]
}

nr(fun, fun_der, int = 5)
```

```
## [1] -1.328269
```