## HW12

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## Exercise 1

setwd("/Users/ninenins/Desktop/R/数据集")

rev\_exp0 <- read.csv("district\_rev\_exp.csv", na.strings = "-")

head(rev\_exp0)

str(rev\_exp0)

aggregate(x=rev\_exp0$TOTALREV, by=list(rev\_exp0$STATE), FUN = mean,na.rm=TRUE,trim = 0.2)

Group.1 x

1 California 24873.727

2 Connecticut 39990.236

3 Massachusetts 33784.898

4 Missouri 7160.468

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## Exercise 2

fn <- function(x,y){

formula <- (x+y) - 1/(x+y)

s <- x + y

if (s == 0){

print("the outcome is 0")

} else {

formula <- (x+y) - 1/(x+y)

return(formula)

print(paste("the outcome is",formula))

}

}

fn(-2,2)

fn(1,2)

> fn(-2,2)

[1] "the outcome is 0"

> fn(1,2)

[1] 2.666667

######################################

## 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)

newton.raphson <- function(x){

x <- c(-2,2)

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

}

return(x[i])

print(paste("Solution is",x[i]))

}

newton.raphson(x)

> newton.raphson(x)

[1] 0.7857143

