## HW11

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

## Exercise 2

x <- rep(NA,500)

for (i in 1:500) {

attend <- runif(100,0,1)

attitude <- 0.5 \* attend + rnorm(100)

error <- rnorm(100)

score <- 0.5 \* attend + attitude + error

reg <- lm(score~attend+attitude)

beta <- reg$coefficients["attend"]

x[i] <- beta

}

mean(x)

**> mean(x)**

**[1] 0.5228134**

**It’s close to 0.5**

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## Exercise 3

li <- 15

fb <- 9

if (li >= 15 & fb >=15){

sns <- (li+fb)\*2

} else if (li < 10 & fb < 10){

sns <- (li+fb)\*0.5

} else {

sns <- li+fb

}

sns

**> sns**

**[1] 24**

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

## Exercise 4

x <- seq(1,3,by=0.01)

y <- (x-1)^3 + 0.5\*x^2 - x - 2

plot(x,y, type = "l")

abline(h=0)

x <- c(1,3)

i <- 2

while(abs(x[i]-x[i-1])>0.0001){

x[i+1] <- x[i] -((x[i]-1)^3 + 0.5\*x[i]^2 - x[i] - 2) / (3\*(x[i]-1)^2 + x[i] - 1)

i <- i + 1

}

print(x[i])

**> print(x[i])**

**[1] 2.209355**