**R Workshop 31st January 2024 – Worksheet 1 Answers**

1. 6 <- y fails because you can’t change the value of the number 6 (and also y is not yet defined).

6 -> y does work because as the slides say you can change the direction of the arrow.

x + z will not work because there is no value assigned for z yet.

1. t <- 1:10

s <- t\*2

p <- s[c(1,5,7)]

q <- cbind(t,s)

1. x <- c(5,80,72,64,-120,75,-2,7,7,8,9)

mean(x) #this is 18.63

median(x) #this is 8

sum(x) #this is 205

which.min(x) #this is 5 (also found by which(x == min(x)))

1. 5 >= 4 #this is TRUE

3 < y #this is TRUE

3 < -y #this is FALSE

3 <- y #this is a typo that is similar to the one above but worth noting in case it happens

x == 7 & y == 3 #this is FALSE

x == 7 | y == 3 #this is TRUE

x == 7 | x != 7 #this is TRUE

(x == 7 | y == 10) & x != y #this is TRUE

1. x <- c(4,3,1,1,0,10) #just some example vector for test the code on

for (i in seq(1,length(x),by=2)) {

print(x[i])

}

Myfunc <- function(x) {

for (i in seq(1,length(x),by=2)) {

print(x[i])

}

return(sum(x))

}

1. table <- read.csv(‘mtcars.csv’)

tablelessthan4 <- table[which(table$carb < 4),]

plot(tablelessthan4$disp, tablelessthan4$hp, pch=17, col='red', main='Disp. Vs. HP of cars with less than 4 carburetors', xlab='Displacement (cu. in.)', ylab='Horsepower')

1. #Below is an example

table <- read.csv(‘mtcars.csv’)

mod <- lm(mpg ~ wt + am + vs + hp, data=table)

summary(mod)

#In the above case, am is either 0 or 1, this means that if am=1, the coefficient in the summary table is added to the mpg (in this case 2.41), otherwise nothing is added since am equals 0. Think about the equation in the slides if you do not understand this fully.