**Ann Arbor ASA / Up and Running Series: R**

**CODE**

a <- 7

objects ()

rm (a)

objects ()

x <- c(5,4,3,6)

v <- 3\*x - 5

help(seq)

??(hist)

library(help = “base”)

library(help = "base")

help.start()

seq(-5, 5, by = .2)

seq(length = 51, from = -5, by = .2)

rep("x", times = 5)

rep("x", each = 5)

data()

data(trees)

summary(trees)

dim(trees)

names(trees)

attach(trees)

class(trees)

trees[c(1:2),2]

trees[3,c("Height", "Girth")]

trees[-c(10:20), "Height"]

subset(trees, Height>80)

subset(trees, Height<70 & Girth>10)

subset(trees, Height <60 | Girth >11)

setwd("C:\\Users\\Owner\\Desktop")

read.table("C:\\Users\\Owner\\Desktop\\furniture.txt",header=TRUE,sep="")

read.table("furniture.txt",header=TRUE,sep="")

library(foreign)

write.table(trees,"treesDATA.txt",row.names=FALSE,sep=",")

furn<-read.table("furniture.txt",sep="",h=T)

dim(furn)

summary(furn)

names(furn)

attach(furn)

plot(Area,Cost,main="Area vs Cost",xlab="Area",ylab="Cost")

hist(Area)

hist(Cost)

boxplot(Cost ~ Type)

boxplot(Cost~Type,main="Boxplot of Cost by Type", col=c("orange","green","blue"), xlab="Type", ylab="Cost")

pairs(furn)

cor(furn[,c(2:3)])

cov(furn[,c(2:3)])

m1<-lm(Cost ~ Area)

summary(m1)

coef(m1)

fitted.values(m1)

residuals(m1)

plot(fitted.values(m1), residuals(m1))

plot(Area,Cost,main="Cost Regression Example",xlab="Cost", ylab="Area")

abline(lm(Cost~Area), col=3, lty=1)

lines( lowess(Cost~Area), col=3, lty=2)

legend(locator(1),c("Linear","Lowess"),lty=c(1,2),col=3)

identify(Area, Cost, row.names(furn))

locator(2)

m2<-lm(Cost ~ Area + Type)

summary(m2)

anova(m1, m2)

"Practice Problems"

"Problem 1"

"a"

seq(0, 5, by=.5)

"b"

rep("a b c", each=3)

"c"

rep(c("a", "b", "c"), each=3)

"Problem 2"

"a"

data(trees)

attach(trees)

names(trees)

hist(Girth,main="Histogram of Trees Girth")

"b"

boxplot(Height,main="Boxplot-Height of Trees",col=c("blue"),xlab="Trees",ylab="Height")

"c"

plot(Girth,Height,main="Girth vs Height of Trees",xlab="Height",ylab="Girth")

"Problem 3"

"a"

m1<-lm(Height~Girth)

summary(m1)

"b"

m2<-lm(Height~Girth+Volume)

summary(m2)

"c"

anova(m1,m2)