classifier = svm(formula = Purchased ~ .,

                 data = training\_set,

                 type = 'C-classification',

                 kernel = 'linear')

m\_class80\_l <- svm(formula = letter\_data ~., data = xclasstrain80\_l, kernal="linear", gamma=2,cost=10)

m\_class80\_l <- svm(letter ~., data = letter\_data, kernal="linear", gamma=2,cost=10)

#linear svm model with gamma of 2 and cost of 10

install.packages("e1071")

library("e1071")

#This library contains the SVM function we want

letter\_data <- wget https://raw.githubusercontent.com/RachelDenny/Machine-Learning-with-R-datasets/master/letterdata.csv

#Call your data by putting it into a CSV

install.packages("ISLR")

library("ISLR")

#Make sure your random test/train data is reproducible (important for science people)

set.seed(125)

#set.seed as long as the number is the same makes the random test data the same for eveyone

#select differnt numbers and see how your outcome changes!!!!

testclass80\_l <-sample(2, nrow(letter\_data), replace=T, prob=c(0.80,0.20))

train80class\_l <-sample(1:nrow(letter\_data), 0.80 \* nrow(letter\_data))

test80class\_l <-setdiff(1:nrow(letter\_data), train80class\_l)

xclasstrain80\_l <-letter\_data[train80class\_l, -15]

yclasstrain80\_l <-letter\_data[train80class\_l, "y"]

xclasstest80\_l <-letter\_data[test80class\_l, -15]

yclasstest80\_l <-letter\_data[test80class\_l, "y"]

#I keep everything at 80 for the training data but it is really 80/20

### This makes it easier to remeber and type later for me, do what you want here

#train data = 80 percent

#test data = 20 percent

m\_class80\_l <- svm(y~Z\_OPF+Z\_EPM,data=xclasstrain80\_c, kernal="linear", gamma=2,cost=10)

#linear svm model with gamma of 2 and cost of 10

m\_class80\_l

#predict the model

p\_class80\_l <-predict(m\_class80\_l, xclasstest80\_l, type="response")

head(p\_class80\_l)

table(p\_class80\_l, xclasstest80\_l$y)

agreement\_80\_l <-p\_class80\_l==xclasstest80\_l$y

table(agreement\_80\_l)

View(xclasstest80\_l)

prop.table(table(agreement\_80\_l))

#plot model

plot(m\_class80\_l, xclasstrain80\_l)

#to check the accuracy of the SVM

##~~\*\*look at p value here\*\*~~##

install.packages("caret")

library("caret")

#Caret has p value math

confusionMatrix(xclasstrain80\_l$y,predict(m\_class80\_l))