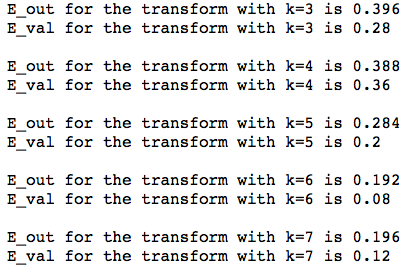


The simulation returned the above output:

So we have the following answers for questions 1 and 2

1. D
2. E

After switching the validation set and the training set we get



So we have the following answers for questions 3,4, and 5

1. D
2. D
3. We have (.084,.196) so the answer is B

# Problem 6

We must get a weighted average of all possible values of depending on how likely it is for vs how likely it is for . We know that if , then since is uniformly distributed and less than , we can say that it is uniformly distributed over

This considered we arrive at the following integral which I will write in two separate forms that are equal:

Where we know for some we have:

And

and

so we have:

Which is closest to 0.4 so the answer is

# Problem 7

Cross validation error:

and

for the constant model we know that for any two points the hypothesis

so we have

For the linear model we have, given :

and

for leaving out we have:

for leaving out we have:

for leaving out we have:

so we want:

by computer algebra system

So the answer is C

# Question 8

The simulation returned SVM performing better 62.5% of the time so the answer is C

# Question 9

The simulation returned SVM performing better 59.7% of the time so the answer is D

# Question 10

The simulation returned an average number of support vectors 2.998 so the answer is B