

# ProjectStartUp1\_LeastSquares-Classifier

December 2, 2020

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[29]: from scipy.io import loadmat
import numpy as np

#LASSO Solver - provided code in earlier assignment
def ista_solve_hot( A, d, la_array ):
    # ista_solve_hot: Iterative soft-thresholding for multiple values of
    # lambda with hot start for each case - the converged value for the previous
    # value of lambda is used as an initial condition for the current lambda.
    # this function solves the minimization problem
    # Minimize  $\|Ax-d\|_2^2 + \lambda\|x\|_1$  (Lasso regression)
    # using iterative soft-thresholding.
    max_iter = 10**4
    tol = 10**(-3)
    tau = 1/np.linalg.norm(A,2)**2
    n = A.shape[1]
    w = np.zeros((n,1))
    num_lam = len(la_array)
    X = np.zeros((n, num_lam))
    for i, each_lambda in enumerate(la_array):
        for j in range(max_iter):
            z = w - tau*(A.T@(A@w-d))
            w_old = w
            w = np.sign(z) * np.clip(np.abs(z)-tau*each_lambda/2, 0, np.inf)
            X[:, i:i+1] = w
            if np.linalg.norm(w - w_old) < tol:
                break
    return X

#####
#SETUP
X = loadmat("RawData.mat")['X']
y = loadmat("RawData.mat")['y']
Xones = np.ones((len(X),1))

#Single threshold for classification
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thresh = 1500
for i in range(len(X)):
    if(y[i] <= thresh):
        y[i] = -1
    if(y[i] > thresh):
        y[i] = 1

print(np.mean(y))

#Optional: Eliminate high values
#for i in range(110):
#    X = np.delete(X, np.argmax(y), 0)
#    y = np.delete(y, np.argmax(y), 0)
#    X = np.delete(X, np.argmin(y), 0)
#    y = np.delete(y, np.argmin(y), 0)

TwoNormCol = np.zeros((len(X.T),1))

#Remove keyword columns (poorly treated data)
X = np.delete(X, 17, 1)
X = np.delete(X, 17, 1)
X = np.delete(X, 17, 1)
X = np.delete(X, 17, 1)
X = np.delete(X, 17, 1)
X = np.delete(X, 17, 1)
X = np.delete(X, 17, 1)
X = np.delete(X, 17, 1)
X = np.delete(X, 17, 1)
X = np.delete(X, 17, 1)

#Normalize columns to 2-norm
for i in range(len(X.T)):
    TwoNormCol[i] = np.sqrt(X[i,:]@X[i,:])
    X[i,:] = X[i,:]/TwoNormCol[i]
#print(TwoNormCol)
#print(X[0,:])
#print(y)

#Form subsets (indices, first group is full X)
Xsubs = np.
    ↪array([[0,49],[0,5],[5,7],[7,9],[9,11],[11,17],[17,20],[20,26],[28,33],[33,37],[37,45],[45,

#Create and run over 11 sets of 3604 entries from X and y,
#using 1 as a primary test set (when needed for lambda)
setArr = np.array([[0,int(len(X)/11)],[int(len(X)/11),int(2*len(X)/
    ↪11)],[int(2*len(X)/11),int(3*len(X)/11)],\
                    [int(3*len(X)/11),int(4*len(X)/11)],[int(4*len(X)/
    ↪11),int(5*len(X)/11)],\

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        [int(5*len(X)/11),int(6*len(X)/11)], [int(6*len(X)/
↪11),int(7*len(X)/11)],\
        [int(7*len(X)/11),int(8*len(X)/11)], [int(8*len(X)/
↪11),int(9*len(X)/11)],\
        [int(9*len(X)/11),int(10*len(X)/11)], [int(10*len(X)/
↪11),int(len(X))]])
#print(setArr)

#Set up lambda
lambdaCount = 20
lambdaTest = 5*np.logspace(-6, 3, lambdaCount)

#Error tally storage
errorOrig = np.zeros((12,1))
#errorOrigOnes = np.zeros((11,1))
errorLASSO = np.zeros((12,1))
#errorRidge = np.zeros((11,1))

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#Loops over (1) all X subsets, (2 and 3) over all 11 sets for testing (1320
↪loops total)
for Xset in range(len(Xsubs)):
    for i in range(11):
        for j in range(11):
            if i != j:
                print("X subset = ",Xset," i = ",i," j = ",j)
                testTally = 0
                #Set up Training and testing sets
                for k in range(11):
                    if i == k:
                        XTest1 = X[setArr[i,0]:setArr[i,1],Xsubs[Xset,0]:
↪Xsubs[Xset,1]]

                        #print(XTest1)
                        yTest1 = y[setArr[i,0]:setArr[i,1]]
                        #print(yTest1)
                    if j == k:
                        XTest2 = X[setArr[j,0]:setArr[j,1],Xsubs[Xset,0]:
↪Xsubs[Xset,1]]

                        #print(XTest2)
                        yTest2 = y[setArr[j,0]:setArr[j,1]]
                        #print(yTest2)
                    if k != j and k != i:
                        if testTally == 0:

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XTrain = X[setArr[k,0]:setArr[k,1],Xsubs[Xset,0]:
↪Xsubs[Xset,1]]

yTrain = y[setArr[k,0]:setArr[k,1]]
testTally = 1
else:
XTrain = np.concatenate((XTrain, X[setArr[k,0]:
↪setArr[k,1],Xsubs[Xset,0]:Xsubs[Xset,1]]),\
axis=0)
yTrain = np.concatenate((yTrain, y[setArr[k,0]:
↪setArr[k,1]]), axis=0)
#print(len(XTrain))
#print(len(XTrain.T))

#Add a column of ones for comparison
Xones = np.ones((len(XTrain),1))
XTrainwithOne = np.concatenate((XTrain, Xones), axis=1)
Xones2 = np.ones((len(XTest2),1))
XTest2withOne = np.concatenate((XTest2, Xones2), axis=1)

#Additional polynomial tests
#UPDATE 11/13: SOME RESULT IN SINGULAR MATRICES, NOT TESTING
↪FURTHER

#Xpoly2 = np.concatenate((XTrain, XTrain*XTrain, Xones), axis=1)
#Xpoly3 = np.concatenate((XTrain, XTrain*XTrain,
↪XTrain*XTrain*XTrain, Xones), axis=1)

#Training 1 (for sets that need it)
#Lowest error is based on lowest average differences (abs val)
↪between y and Xw
WLASSO = ista_solve_hot(XTrain,yTrain,lambdaTest)

# Storage for current iteration ridge regression
#Wrid = np.zeros((len(X.T),lambdaCount))

#UPDATE 11/15: Has been too much for the kernel to handle
↪(using optimized setup per activity 17)
#Not continuing with Ridge Regression
# Ridge regression
#for index in range(lambdaCount):
#WRID[:,index] = np.linalg.inv(XTrain.
↪T@XTrain+lambdaTest[index]*\
#np.
↪identity(len(XTrain)))@XTrain.T@yTrain[:,0]

#check with Test Set 1
y_lasso1 = XTest1@WLASSO

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#y_riid1 = XTest1@WRID
errorTallyLasso = np.zeros((lambdaCount,1))
#errorTallyRid = np.zeros((lambdaCount,1))
for lam in range(lambdaCount):
    for index in range(len(XTest1)):
        if (yTest1[index] > 0 and y_lasso1[index,lam] < 0) or
→(yTest1[index] < 0 and y_lasso1[index,lam] > 0 or y_lasso1[index,lam] == 0):
            errorTallyLasso[lam] = errorTallyLasso[lam] + 1
        #if (max(y_lasso1[:,lam]) < 1e-6):
        #    print(max(y_lasso1[:,lam]))
        #print(errorTallyLasso[lam])

#print(errorTallyLasso)
#print(errorTallyRid)
OptimalLambdaLasso = np.argmin(errorTallyLasso)
#print("Optimal lambda: ",lambdaTest[OptimalLambdaLasso]," with
→min ",min(errorTallyLasso)/(len(X)/11))
#print(np.argmin(errorTallyLasso))
#OptimalLambdaRid = np.argmin(errorTallyRid)
#print(np.argmin(errorTallyRid))

#Running on Testing 2
wOrig = np.linalg.inv(XTrain.T@XTrain)@XTrain.T@yTrain
yTestOrig = XTest2@wOrig
#print(yTestOrig)
yTestLASSO = XTest2@WLASSO[:,OptimalLambdaLasso]

errorOrigTemp = 0
errorLASSOTemp = 0
for index in range(len(XTest2)):
    if (yTest1[index] > 0 and yTestOrig[index] < 0) or
→(yTest1[index] < 0 and yTestOrig[index] > 0):
        errorOrigTemp = errorOrigTemp + 1
    if (yTest1[index] > 0 and yTestLASSO[index] < 0) or
→(yTest1[index] < 0 and yTestLASSO[index] > 0):
        errorLASSOTemp = errorLASSOTemp + 1

errorOrigTemp = errorOrigTemp/len(XTest2)
errorLASSOTemp = errorLASSOTemp/len(XTest2)
print("Mean error from standard least squares: ",errorOrigTemp)
print("Mean error from LASSO: ",errorLASSOTemp)

errorOrig[Xset] = errorOrig[Xset] + errorOrigTemp
errorLASSO[Xset] = errorLASSO[Xset] + errorLASSOTemp

#UPDATE 11/13: SOME ONES X RESULT IN SINGULAR MATRIX, NOT
→TESTING FURTHER

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        #wOrigOnes = np.linalg.inv(XTrainwithOne.
↪T@XTrainwithOne)@XTrainwithOne.T@yTrain
        #yTestOrigOne = XTest2withOne@wOrigOnes
        #print(yTestOrigOne)

GlobalMeanOrigError = np.zeros((11,1))
GlobalMeanLASSOError = np.zeros((11,1))
for index in range(11):
    GlobalMeanOrigError[index] = errorOrig[index]/110
    GlobalMeanLASSOError[index] = errorLASSO[index]/110
    print("Mean Error for pure least squares, X subset ",(index+1)," =␣
↪",GlobalMeanOrigError[index])
    print("Mean Error for LASSO, X subset ",(index+1)," =␣
↪",GlobalMeanLASSOError[index])

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-0.07986076077086066
X subset = 0 , i = 0 , j = 1
Mean error from standard least squares: 0.49278579356270813
Mean error from LASSO: 0.49250832408435075
X subset = 0 , i = 0 , j = 2
Mean error from standard least squares: 0.5016648168701443
Mean error from LASSO: 0.49778024417314093
X subset = 0 , i = 0 , j = 3
Mean error from standard least squares: 0.5047169811320755
Mean error from LASSO: 0.4972253052164262
X subset = 0 , i = 0 , j = 4
Mean error from standard least squares: 0.4855715871254162
Mean error from LASSO: 0.5002774694783574
X subset = 0 , i = 0 , j = 5
Mean error from standard least squares: 0.4997225305216426
Mean error from LASSO: 0.4894561598224195
X subset = 0 , i = 0 , j = 6
Mean error from standard least squares: 0.5049944506104328
Mean error from LASSO: 0.4911209766925638
X subset = 0 , i = 0 , j = 7
Mean error from standard least squares: 0.5074916759156493
Mean error from LASSO: 0.4936182019977802
X subset = 0 , i = 0 , j = 8
Mean error from standard least squares: 0.5102663706992231
Mean error from LASSO: 0.49528301886792453
X subset = 0 , i = 0 , j = 9
Mean error from standard least squares: 0.5097114317425083
Mean error from LASSO: 0.4975027746947836
X subset = 0 , i = 0 , j = 10
Mean error from standard least squares: 0.5011098779134295
Mean error from LASSO: 0.5049944506104328
X subset = 0 , i = 1 , j = 0

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Mean error from standard least squares: 0.5066592674805771  
 Mean error from LASSO: 0.4811320754716981  
 X subset = 0 , i = 1 , j = 2  
 Mean error from standard least squares: 0.5083240843507214  
 Mean error from LASSO: 0.48668146503884574  
 X subset = 0 , i = 1 , j = 3  
 Mean error from standard least squares: 0.5102663706992231  
 Mean error from LASSO: 0.4653163152053274  
 X subset = 0 , i = 1 , j = 4  
 Mean error from standard least squares: 0.48335183129855713  
 Mean error from LASSO: 0.462819089900111  
 X subset = 0 , i = 1 , j = 5  
 Mean error from standard least squares: 0.4975027746947836  
 Mean error from LASSO: 0.4675360710321865  
 X subset = 0 , i = 1 , j = 6  
 Mean error from standard least squares: 0.5038845726970034  
 Mean error from LASSO: 0.4653163152053274  
 X subset = 0 , i = 1 , j = 7  
 Mean error from standard least squares: 0.4986126526082131  
 Mean error from LASSO: 0.46170921198668147  
 X subset = 0 , i = 1 , j = 8  
 Mean error from standard least squares: 0.5055493895671476  
 Mean error from LASSO: 0.4794672586015538  
 X subset = 0 , i = 1 , j = 9  
 Mean error from standard least squares: 0.52330743618202  
 Mean error from LASSO: 0.4572697003329634  
 X subset = 0 , i = 1 , j = 10  
 Mean error from standard least squares: 0.5147058823529411  
 Mean error from LASSO: 0.4542175360710322  
 X subset = 0 , i = 2 , j = 0  
 Mean error from standard least squares: 0.4936182019977802  
 Mean error from LASSO: 0.5396781354051055  
 X subset = 0 , i = 2 , j = 1  
 Mean error from standard least squares: 0.46642619311875694  
 Mean error from LASSO: 0.5502219755826859  
 X subset = 0 , i = 2 , j = 3  
 Mean error from standard least squares: 0.4936182019977802  
 Mean error from LASSO: 0.5749167591564928  
 X subset = 0 , i = 2 , j = 4  
 Mean error from standard least squares: 0.49306326304106546  
 Mean error from LASSO: 0.5735294117647058  
 X subset = 0 , i = 2 , j = 5  
 Mean error from standard least squares: 0.5094339622641509  
 Mean error from LASSO: 0.5738068812430632  
 X subset = 0 , i = 2 , j = 6  
 Mean error from standard least squares: 0.4769700332963374  
 Mean error from LASSO: 0.574361820199778  
 X subset = 0 , i = 2 , j = 7

Mean error from standard least squares: 0.48612652608213097  
 Mean error from LASSO: 0.5768590455049944  
 X subset = 0 , i = 2 , j = 8  
 Mean error from standard least squares: 0.47835738068812433  
 Mean error from LASSO: 0.5721420643729189  
 X subset = 0 , i = 2 , j = 9  
 Mean error from standard least squares: 0.4983351831298557  
 Mean error from LASSO: 0.5635405105438401  
 X subset = 0 , i = 2 , j = 10  
 Mean error from standard least squares: 0.4528301886792453  
 Mean error from LASSO: 0.5541065482796892  
 X subset = 0 , i = 3 , j = 0  
 Mean error from standard least squares: 0.4900110987791343  
 Mean error from LASSO: 0.5294117647058824  
 X subset = 0 , i = 3 , j = 1  
 Mean error from standard least squares: 0.4830743618201998  
 Mean error from LASSO: 0.5482796892341842  
 X subset = 0 , i = 3 , j = 2  
 Mean error from standard least squares: 0.5041620421753608  
 Mean error from LASSO: 0.531354051054384  
 X subset = 0 , i = 3 , j = 4  
 Mean error from standard least squares: 0.5074916759156493  
 Mean error from LASSO: 0.560488346281909  
 X subset = 0 , i = 3 , j = 5  
 Mean error from standard least squares: 0.4916759156492786  
 Mean error from LASSO: 0.5665926748057714  
 X subset = 0 , i = 3 , j = 6  
 Mean error from standard least squares: 0.4936182019977802  
 Mean error from LASSO: 0.5518867924528302  
 X subset = 0 , i = 3 , j = 7  
 Mean error from standard least squares: 0.4913984461709212  
 Mean error from LASSO: 0.5738068812430632  
 X subset = 0 , i = 3 , j = 8  
 Mean error from standard least squares: 0.5177580466148723  
 Mean error from LASSO: 0.5552164261931187  
 X subset = 0 , i = 3 , j = 9  
 Mean error from standard least squares: 0.5047169811320755  
 Mean error from LASSO: 0.5693673695893452  
 X subset = 0 , i = 3 , j = 10  
 Mean error from standard least squares: 0.4855715871254162  
 Mean error from LASSO: 0.5499445061043285  
 X subset = 0 , i = 4 , j = 0  
 Mean error from standard least squares: 0.4955604883462819  
 Mean error from LASSO: 0.5094339622641509  
 X subset = 0 , i = 4 , j = 1  
 Mean error from standard least squares: 0.5072142064372919  
 Mean error from LASSO: 0.5149833518312985  
 X subset = 0 , i = 4 , j = 2



Mean error from standard least squares: 0.4944506104328524  
 Mean error from LASSO: 0.5241398446170921  
 X subset = 0 , i = 4 , j = 3  
 Mean error from standard least squares: 0.5044395116537181  
 Mean error from LASSO: 0.5310765815760267  
 X subset = 0 , i = 4 , j = 5  
 Mean error from standard least squares: 0.4961154273029967  
 Mean error from LASSO: 0.5288568257491676  
 X subset = 0 , i = 4 , j = 6  
 Mean error from standard least squares: 0.5005549389567148  
 Mean error from LASSO: 0.5283018867924528  
 X subset = 0 , i = 4 , j = 7  
 Mean error from standard least squares: 0.49528301886792453  
 Mean error from LASSO: 0.529134295227525  
 X subset = 0 , i = 4 , j = 8  
 Mean error from standard least squares: 0.4700332963374029  
 Mean error from LASSO: 0.5380133185349611  
 X subset = 0 , i = 4 , j = 9  
 Mean error from standard least squares: 0.5130410654827969  
 Mean error from LASSO: 0.5274694783573807  
 X subset = 0 , i = 4 , j = 10  
 Mean error from standard least squares: 0.49223085460599336  
 Mean error from LASSO: 0.5310765815760267  
 X subset = 0 , i = 5 , j = 0  
 Mean error from standard least squares: 0.5019422863485017  
 Mean error from LASSO: 0.49250832408435075  
 X subset = 0 , i = 5 , j = 1  
 Mean error from standard least squares: 0.5024972253052165  
 Mean error from LASSO: 0.48640399556048836  
 X subset = 0 , i = 5 , j = 2  
 Mean error from standard least squares: 0.49528301886792453  
 Mean error from LASSO: 0.5002774694783574  
 X subset = 0 , i = 5 , j = 3  
 Mean error from standard least squares: 0.5038845726970034  
 Mean error from LASSO: 0.49667036625971145  
 X subset = 0 , i = 5 , j = 4  
 Mean error from standard least squares: 0.4975027746947836  
 Mean error from LASSO: 0.49084350721420644  
 X subset = 0 , i = 5 , j = 6  
 Mean error from standard least squares: 0.49250832408435075  
 Mean error from LASSO: 0.49223085460599336  
 X subset = 0 , i = 5 , j = 7  
 Mean error from standard least squares: 0.5102663706992231  
 Mean error from LASSO: 0.503607103218646  
 X subset = 0 , i = 5 , j = 8  
 Mean error from standard least squares: 0.5155382907880133  
 Mean error from LASSO: 0.49694783573806883  
 X subset = 0 , i = 5 , j = 9

Mean error from standard least squares: 0.49639289678135406  
 Mean error from LASSO: 0.49472807991120976  
 X subset = 0 , i = 5 , j = 10  
 Mean error from standard least squares: 0.49778024417314093  
 Mean error from LASSO: 0.4955604883462819  
 X subset = 0 , i = 6 , j = 0  
 Mean error from standard least squares: 0.51165371809101  
 Mean error from LASSO: 0.49916759156492785  
 X subset = 0 , i = 6 , j = 1  
 Mean error from standard least squares: 0.5102663706992231  
 Mean error from LASSO: 0.4980577136514983  
 X subset = 0 , i = 6 , j = 2  
 Mean error from standard least squares: 0.5102663706992231  
 Mean error from LASSO: 0.4958379578246393  
 X subset = 0 , i = 6 , j = 3  
 Mean error from standard least squares: 0.4958379578246393  
 Mean error from LASSO: 0.5088790233074362  
 X subset = 0 , i = 6 , j = 4  
 Mean error from standard least squares: 0.5022197558268591  
 Mean error from LASSO: 0.5052719200887902  
 X subset = 0 , i = 6 , j = 5  
 Mean error from standard least squares: 0.4733629300776915  
 Mean error from LASSO: 0.49889012208657046  
 X subset = 0 , i = 6 , j = 7  
 Mean error from standard least squares: 0.5027746947835738  
 Mean error from LASSO: 0.49916759156492785  
 X subset = 0 , i = 6 , j = 8  
 Mean error from standard least squares: 0.4869589345172031  
 Mean error from LASSO: 0.5130410654827969  
 X subset = 0 , i = 6 , j = 9  
 Mean error from standard least squares: 0.5002774694783574  
 Mean error from LASSO: 0.4913984461709212  
 X subset = 0 , i = 6 , j = 10  
 Mean error from standard least squares: 0.5069367369589345  
 Mean error from LASSO: 0.5083240843507214  
 X subset = 0 , i = 7 , j = 0  
 Mean error from standard least squares: 0.4972253052164262  
 Mean error from LASSO: 0.5185904550499445  
 X subset = 0 , i = 7 , j = 1  
 Mean error from standard least squares: 0.4900110987791343  
 Mean error from LASSO: 0.517480577136515  
 X subset = 0 , i = 7 , j = 2  
 Mean error from standard least squares: 0.5041620421753608  
 Mean error from LASSO: 0.5269145394006659  
 X subset = 0 , i = 7 , j = 3  
 Mean error from standard least squares: 0.4814095449500555  
 Mean error from LASSO: 0.5321864594894562  
 X subset = 0 , i = 7 , j = 4

Mean error from standard least squares: 0.49694783573806883  
 Mean error from LASSO: 0.5302441731409545  
 X subset = 0 , i = 7 , j = 5  
 Mean error from standard least squares: 0.5002774694783574  
 Mean error from LASSO: 0.5382907880133185  
 X subset = 0 , i = 7 , j = 6  
 Mean error from standard least squares: 0.5033296337402886  
 Mean error from LASSO: 0.5238623751387348  
 X subset = 0 , i = 7 , j = 8  
 Mean error from standard least squares: 0.4869589345172031  
 Mean error from LASSO: 0.5258046614872364  
 X subset = 0 , i = 7 , j = 9  
 Mean error from standard least squares: 0.49223085460599336  
 Mean error from LASSO: 0.5152608213096559  
 X subset = 0 , i = 7 , j = 10  
 Mean error from standard least squares: 0.4741953385127636  
 Mean error from LASSO: 0.5305216426193119  
 X subset = 0 , i = 8 , j = 0  
 Mean error from standard least squares: 0.5049944506104328  
 Mean error from LASSO: 0.5055493895671476  
 X subset = 0 , i = 8 , j = 1  
 Mean error from standard least squares: 0.5022197558268591  
 Mean error from LASSO: 0.5283018867924528  
 X subset = 0 , i = 8 , j = 2  
 Mean error from standard least squares: 0.5105438401775805  
 Mean error from LASSO: 0.5188679245283019  
 X subset = 0 , i = 8 , j = 3  
 Mean error from standard least squares: 0.4986126526082131  
 Mean error from LASSO: 0.5319089900110988  
 X subset = 0 , i = 8 , j = 4  
 Mean error from standard least squares: 0.46587125416204217  
 Mean error from LASSO: 0.5366259711431742  
 X subset = 0 , i = 8 , j = 5  
 Mean error from standard least squares: 0.4797447280799112  
 Mean error from LASSO: 0.5341287458379578  
 X subset = 0 , i = 8 , j = 6  
 Mean error from standard least squares: 0.4911209766925638  
 Mean error from LASSO: 0.5391231964483907  
 X subset = 0 , i = 8 , j = 7  
 Mean error from standard least squares: 0.49694783573806883  
 Mean error from LASSO: 0.5471698113207547  
 X subset = 0 , i = 8 , j = 9  
 Mean error from standard least squares: 0.47807991120976695  
 Mean error from LASSO: 0.5427302996670367  
 X subset = 0 , i = 8 , j = 10  
 Mean error from standard least squares: 0.4894561598224195  
 Mean error from LASSO: 0.5374583795782464  
 X subset = 0 , i = 9 , j = 0

Mean error from standard least squares: 0.4986126526082131  
 Mean error from LASSO: 0.5366259711431742  
 X subset = 0 , i = 9 , j = 1  
 Mean error from standard least squares: 0.48057713651498335  
 Mean error from LASSO: 0.5360710321864595  
 X subset = 0 , i = 9 , j = 2  
 Mean error from standard least squares: 0.5219200887902331  
 Mean error from LASSO: 0.554661487236404  
 X subset = 0 , i = 9 , j = 3  
 Mean error from standard least squares: 0.5013873473917869  
 Mean error from LASSO: 0.5629855715871254  
 X subset = 0 , i = 9 , j = 4  
 Mean error from standard least squares: 0.508046614872364  
 Mean error from LASSO: 0.5701997780244173  
 X subset = 0 , i = 9 , j = 5  
 Mean error from standard least squares: 0.47225305216426194  
 Mean error from LASSO: 0.5785238623751388  
 X subset = 0 , i = 9 , j = 6  
 Mean error from standard least squares: 0.46365149833518315  
 Mean error from LASSO: 0.5724195338512763  
 X subset = 0 , i = 9 , j = 7  
 Mean error from standard least squares: 0.4714206437291898  
 Mean error from LASSO: 0.5688124306326304  
 X subset = 0 , i = 9 , j = 8  
 Mean error from standard least squares: 0.48612652608213097  
 Mean error from LASSO: 0.5615982241953386  
 X subset = 0 , i = 9 , j = 10  
 Mean error from standard least squares: 0.46170921198668147  
 Mean error from LASSO: 0.5610432852386238  
 X subset = 0 , i = 10 , j = 0  
 Mean error from standard least squares: 0.5019422863485017  
 Mean error from LASSO: 0.5418978912319645  
 X subset = 0 , i = 10 , j = 1  
 Mean error from standard least squares: 0.48917869034406214  
 Mean error from LASSO: 0.532741398446171  
 X subset = 0 , i = 10 , j = 2  
 Mean error from standard least squares: 0.5005549389567148  
 Mean error from LASSO: 0.5507769145394007  
 X subset = 0 , i = 10 , j = 3  
 Mean error from standard least squares: 0.5063817980022197  
 Mean error from LASSO: 0.566315205327414  
 X subset = 0 , i = 10 , j = 4  
 Mean error from standard least squares: 0.4775249722530522  
 Mean error from LASSO: 0.556881243063263  
 X subset = 0 , i = 10 , j = 5  
 Mean error from standard least squares: 0.5044395116537181  
 Mean error from LASSO: 0.5696448390677026  
 X subset = 0 , i = 10 , j = 6

Mean error from standard least squares: 0.5069367369589345  
 Mean error from LASSO: 0.5718645948945617  
 X subset = 0 , i = 10 , j = 7  
 Mean error from standard least squares: 0.4572697003329634  
 Mean error from LASSO: 0.574361820199778  
 X subset = 0 , i = 10 , j = 8  
 Mean error from standard least squares: 0.47780244173140957  
 Mean error from LASSO: 0.5665926748057714  
 X subset = 0 , i = 10 , j = 9  
 Mean error from standard least squares: 0.46476137624861263  
 Mean error from LASSO: 0.5549389567147613  
 X subset = 1 , i = 0 , j = 1  
 Mean error from standard least squares: 0.5052719200887902  
 Mean error from LASSO: 0.5038845726970034  
 X subset = 1 , i = 0 , j = 2  
 Mean error from standard least squares: 0.5124861265260822  
 Mean error from LASSO: 0.5038845726970034  
 X subset = 1 , i = 0 , j = 3  
 Mean error from standard least squares: 0.5030521642619312  
 Mean error from LASSO: 0.5038845726970034  
 X subset = 1 , i = 0 , j = 4  
 Mean error from standard least squares: 0.5024972253052165  
 Mean error from LASSO: 0.5038845726970034  
 X subset = 1 , i = 0 , j = 5  
 Mean error from standard least squares: 0.49889012208657046  
 Mean error from LASSO: 0.5038845726970034  
 X subset = 1 , i = 0 , j = 6  
 Mean error from standard least squares: 0.505826859045505  
 Mean error from LASSO: 0.5038845726970034  
 X subset = 1 , i = 0 , j = 7  
 Mean error from standard least squares: 0.5055493895671476  
 Mean error from LASSO: 0.5038845726970034  
 X subset = 1 , i = 0 , j = 8  
 Mean error from standard least squares: 0.5047169811320755  
 Mean error from LASSO: 0.5038845726970034  
 X subset = 1 , i = 0 , j = 9  
 Mean error from standard least squares: 0.5002774694783574  
 Mean error from LASSO: 0.5038845726970034  
 X subset = 1 , i = 0 , j = 10  
 Mean error from standard least squares: 0.5055493895671476  
 Mean error from LASSO: 0.5038845726970034  
 X subset = 1 , i = 1 , j = 0  
 Mean error from standard least squares: 0.5441176470588235  
 Mean error from LASSO: 0.5463374028856826  
 X subset = 1 , i = 1 , j = 2  
 Mean error from standard least squares: 0.5374583795782464  
 Mean error from LASSO: 0.5463374028856826  
 X subset = 1 , i = 1 , j = 3

Mean error from standard least squares: 0.5341287458379578  
 Mean error from LASSO: 0.5463374028856826  
 X subset = 1 , i = 1 , j = 4  
 Mean error from standard least squares: 0.5413429522752498  
 Mean error from LASSO: 0.5463374028856826  
 X subset = 1 , i = 1 , j = 5  
 Mean error from standard least squares: 0.5352386237513873  
 Mean error from LASSO: 0.5463374028856826  
 X subset = 1 , i = 1 , j = 6  
 Mean error from standard least squares: 0.5382907880133185  
 Mean error from LASSO: 0.5463374028856826  
 X subset = 1 , i = 1 , j = 7  
 Mean error from standard least squares: 0.5316315205327414  
 Mean error from LASSO: 0.5463374028856826  
 X subset = 1 , i = 1 , j = 8  
 Mean error from standard least squares: 0.5418978912319645  
 Mean error from LASSO: 0.5463374028856826  
 X subset = 1 , i = 1 , j = 9  
 Mean error from standard least squares: 0.5474472807991121  
 Mean error from LASSO: 0.5463374028856826  
 X subset = 1 , i = 1 , j = 10  
 Mean error from standard least squares: 0.5388457269700333  
 Mean error from LASSO: 0.5463374028856826  
 X subset = 1 , i = 2 , j = 0  
 Mean error from standard least squares: 0.4167591564927858  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 1 , i = 2 , j = 1  
 Mean error from standard least squares: 0.413984461709212  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 1 , i = 2 , j = 3  
 Mean error from standard least squares: 0.42314095449500555  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 1 , i = 2 , j = 4  
 Mean error from standard least squares: 0.41315205327413984  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 1 , i = 2 , j = 5  
 Mean error from standard least squares: 0.42480577136514985  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 1 , i = 2 , j = 6  
 Mean error from standard least squares: 0.41731409544950054  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 1 , i = 2 , j = 7  
 Mean error from standard least squares: 0.42702552719200887  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 1 , i = 2 , j = 8  
 Mean error from standard least squares: 0.42563817980022195  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 1 , i = 2 , j = 9

Mean error from standard least squares: 0.416204217536071  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 1 , i = 2 , j = 10  
 Mean error from standard least squares: 0.427857935627081  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 1 , i = 3 , j = 0  
 Mean error from standard least squares: 0.42730299667036625  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 1 , i = 3 , j = 1  
 Mean error from standard least squares: 0.42314095449500555  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 1 , i = 3 , j = 2  
 Mean error from standard least squares: 0.42147613762486125  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 1 , i = 3 , j = 4  
 Mean error from standard least squares: 0.4322974472807991  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 1 , i = 3 , j = 5  
 Mean error from standard least squares: 0.44034406215316313  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 1 , i = 3 , j = 6  
 Mean error from standard least squares: 0.43118756936736957  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 1 , i = 3 , j = 7  
 Mean error from standard least squares: 0.4367369589345172  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 1 , i = 3 , j = 8  
 Mean error from standard least squares: 0.4422863485016648  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 1 , i = 3 , j = 9  
 Mean error from standard least squares: 0.42591564927857933  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 1 , i = 3 , j = 10  
 Mean error from standard least squares: 0.4325749167591565  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 1 , i = 4 , j = 0  
 Mean error from standard least squares: 0.470865704772475  
 Mean error from LASSO: 0.46448390677025525  
 X subset = 1 , i = 4 , j = 1  
 Mean error from standard least squares: 0.47031076581576026  
 Mean error from LASSO: 0.46448390677025525  
 X subset = 1 , i = 4 , j = 2  
 Mean error from standard least squares: 0.46892341842397334  
 Mean error from LASSO: 0.46448390677025525  
 X subset = 1 , i = 4 , j = 3  
 Mean error from standard least squares: 0.4608768035516093  
 Mean error from LASSO: 0.46448390677025525  
 X subset = 1 , i = 4 , j = 5

Mean error from standard least squares: 0.4827968923418424  
 Mean error from LASSO: 0.46448390677025525  
 X subset = 1 , i = 4 , j = 6  
 Mean error from standard least squares: 0.46420643729189787  
 Mean error from LASSO: 0.46448390677025525  
 X subset = 1 , i = 4 , j = 7  
 Mean error from standard least squares: 0.4711431742508324  
 Mean error from LASSO: 0.46448390677025525  
 X subset = 1 , i = 4 , j = 8  
 Mean error from standard least squares: 0.47807991120976695  
 Mean error from LASSO: 0.46448390677025525  
 X subset = 1 , i = 4 , j = 9  
 Mean error from standard least squares: 0.47613762486126526  
 Mean error from LASSO: 0.46448390677025525  
 X subset = 1 , i = 4 , j = 10  
 Mean error from standard least squares: 0.470865704772475  
 Mean error from LASSO: 0.46448390677025525  
 X subset = 1 , i = 5 , j = 0  
 Mean error from standard least squares: 0.5033296337402886  
 Mean error from LASSO: 0.5061043285238623  
 X subset = 1 , i = 5 , j = 1  
 Mean error from standard least squares: 0.5066592674805771  
 Mean error from LASSO: 0.5061043285238623  
 X subset = 1 , i = 5 , j = 2  
 Mean error from standard least squares: 0.5049944506104328  
 Mean error from LASSO: 0.5061043285238623  
 X subset = 1 , i = 5 , j = 3  
 Mean error from standard least squares: 0.5005549389567148  
 Mean error from LASSO: 0.5061043285238623  
 X subset = 1 , i = 5 , j = 4  
 Mean error from standard least squares: 0.5063817980022197  
 Mean error from LASSO: 0.5061043285238623  
 X subset = 1 , i = 5 , j = 6  
 Mean error from standard least squares: 0.5097114317425083  
 Mean error from LASSO: 0.5061043285238623  
 X subset = 1 , i = 5 , j = 7  
 Mean error from standard least squares: 0.5024972253052165  
 Mean error from LASSO: 0.5061043285238623  
 X subset = 1 , i = 5 , j = 8  
 Mean error from standard least squares: 0.5083240843507214  
 Mean error from LASSO: 0.5061043285238623  
 X subset = 1 , i = 5 , j = 9  
 Mean error from standard least squares: 0.5119311875693674  
 Mean error from LASSO: 0.5061043285238623  
 X subset = 1 , i = 5 , j = 10  
 Mean error from standard least squares: 0.5124861265260822  
 Mean error from LASSO: 0.5061043285238623  
 X subset = 1 , i = 6 , j = 0



Mean error from standard least squares: 0.5019422863485017  
 Mean error from LASSO: 0.4983351831298557  
 X subset = 1 , i = 6 , j = 1  
 Mean error from standard least squares: 0.5002774694783574  
 Mean error from LASSO: 0.4983351831298557  
 X subset = 1 , i = 6 , j = 2  
 Mean error from standard least squares: 0.4986126526082131  
 Mean error from LASSO: 0.4983351831298557  
 X subset = 1 , i = 6 , j = 3  
 Mean error from standard least squares: 0.5005549389567148  
 Mean error from LASSO: 0.4983351831298557  
 X subset = 1 , i = 6 , j = 4  
 Mean error from standard least squares: 0.5038845726970034  
 Mean error from LASSO: 0.4983351831298557  
 X subset = 1 , i = 6 , j = 5  
 Mean error from standard least squares: 0.49916759156492785  
 Mean error from LASSO: 0.4983351831298557  
 X subset = 1 , i = 6 , j = 7  
 Mean error from standard least squares: 0.49916759156492785  
 Mean error from LASSO: 0.4983351831298557  
 X subset = 1 , i = 6 , j = 8  
 Mean error from standard least squares: 0.49223085460599336  
 Mean error from LASSO: 0.4983351831298557  
 X subset = 1 , i = 6 , j = 9  
 Mean error from standard least squares: 0.4997225305216426  
 Mean error from LASSO: 0.4983351831298557  
 X subset = 1 , i = 6 , j = 10  
 Mean error from standard least squares: 0.48612652608213097  
 Mean error from LASSO: 0.4983351831298557  
 X subset = 1 , i = 7 , j = 0  
 Mean error from standard least squares: 0.46337402885682577  
 Mean error from LASSO: 0.46448390677025525  
 X subset = 1 , i = 7 , j = 1  
 Mean error from standard least squares: 0.4700332963374029  
 Mean error from LASSO: 0.46448390677025525  
 X subset = 1 , i = 7 , j = 2  
 Mean error from standard least squares: 0.4653163152053274  
 Mean error from LASSO: 0.46448390677025525  
 X subset = 1 , i = 7 , j = 3  
 Mean error from standard least squares: 0.47058823529411764  
 Mean error from LASSO: 0.46448390677025525  
 X subset = 1 , i = 7 , j = 4  
 Mean error from standard least squares: 0.46892341842397334  
 Mean error from LASSO: 0.46448390677025525  
 X subset = 1 , i = 7 , j = 5  
 Mean error from standard least squares: 0.47835738068812433  
 Mean error from LASSO: 0.46448390677025525  
 X subset = 1 , i = 7 , j = 6

Mean error from standard least squares: 0.46892341842397334  
Mean error from LASSO: 0.46448390677025525  
X subset = 1 , i = 7 , j = 8  
Mean error from standard least squares: 0.46392896781354054  
Mean error from LASSO: 0.46448390677025525  
X subset = 1 , i = 7 , j = 9  
Mean error from standard least squares: 0.4728079911209767  
Mean error from LASSO: 0.46448390677025525  
X subset = 1 , i = 7 , j = 10  
Mean error from standard least squares: 0.48029966703662597  
Mean error from LASSO: 0.46448390677025525  
X subset = 1 , i = 8 , j = 0  
Mean error from standard least squares: 0.4667036625971143  
Mean error from LASSO: 0.4514428412874584  
X subset = 1 , i = 8 , j = 1  
Mean error from standard least squares: 0.45754716981132076  
Mean error from LASSO: 0.4514428412874584  
X subset = 1 , i = 8 , j = 2  
Mean error from standard least squares: 0.47447280799112096  
Mean error from LASSO: 0.4514428412874584  
X subset = 1 , i = 8 , j = 3  
Mean error from standard least squares: 0.46170921198668147  
Mean error from LASSO: 0.4514428412874584  
X subset = 1 , i = 8 , j = 4  
Mean error from standard least squares: 0.4589345172031077  
Mean error from LASSO: 0.4514428412874584  
X subset = 1 , i = 8 , j = 5  
Mean error from standard least squares: 0.46059933407325193  
Mean error from LASSO: 0.4514428412874584  
X subset = 1 , i = 8 , j = 6  
Mean error from standard least squares: 0.4655937846836848  
Mean error from LASSO: 0.4514428412874584  
X subset = 1 , i = 8 , j = 7  
Mean error from standard least squares: 0.46476137624861263  
Mean error from LASSO: 0.4514428412874584  
X subset = 1 , i = 8 , j = 9  
Mean error from standard least squares: 0.46614872364039955  
Mean error from LASSO: 0.4514428412874584  
X subset = 1 , i = 8 , j = 10  
Mean error from standard least squares: 0.46781354051054386  
Mean error from LASSO: 0.4514428412874584  
X subset = 1 , i = 9 , j = 0  
Mean error from standard least squares: 0.4209211986681465  
Mean error from LASSO: 0.40427302996670367  
X subset = 1 , i = 9 , j = 1  
Mean error from standard least squares: 0.4109322974472808  
Mean error from LASSO: 0.40427302996670367  
X subset = 1 , i = 9 , j = 2

Mean error from standard least squares: 0.43174250832408434  
Mean error from LASSO: 0.40427302996670367  
X subset = 1 , i = 9 , j = 3  
Mean error from standard least squares: 0.42924528301886794  
Mean error from LASSO: 0.40427302996670367  
X subset = 1 , i = 9 , j = 4  
Mean error from standard least squares: 0.4320199778024417  
Mean error from LASSO: 0.40427302996670367  
X subset = 1 , i = 9 , j = 5  
Mean error from standard least squares: 0.4364594894561598  
Mean error from LASSO: 0.40427302996670367  
X subset = 1 , i = 9 , j = 6  
Mean error from standard least squares: 0.4261931187569367  
Mean error from LASSO: 0.40427302996670367  
X subset = 1 , i = 9 , j = 7  
Mean error from standard least squares: 0.4284128745837958  
Mean error from LASSO: 0.40427302996670367  
X subset = 1 , i = 9 , j = 8  
Mean error from standard least squares: 0.4284128745837958  
Mean error from LASSO: 0.40427302996670367  
X subset = 1 , i = 9 , j = 10  
Mean error from standard least squares: 0.422031076581576  
Mean error from LASSO: 0.40427302996670367  
X subset = 1 , i = 10 , j = 0  
Mean error from standard least squares: 0.4137069922308546  
Mean error from LASSO: 0.40427302996670367  
X subset = 1 , i = 10 , j = 1  
Mean error from standard least squares: 0.42064372918978915  
Mean error from LASSO: 0.40427302996670367  
X subset = 1 , i = 10 , j = 2  
Mean error from standard least squares: 0.42758046614872364  
Mean error from LASSO: 0.40427302996670367  
X subset = 1 , i = 10 , j = 3  
Mean error from standard least squares: 0.4320199778024417  
Mean error from LASSO: 0.40427302996670367  
X subset = 1 , i = 10 , j = 4  
Mean error from standard least squares: 0.4253607103218646  
Mean error from LASSO: 0.40427302996670367  
X subset = 1 , i = 10 , j = 5  
Mean error from standard least squares: 0.4281354051054384  
Mean error from LASSO: 0.40427302996670367  
X subset = 1 , i = 10 , j = 6  
Mean error from standard least squares: 0.42924528301886794  
Mean error from LASSO: 0.40427302996670367  
X subset = 1 , i = 10 , j = 7  
Mean error from standard least squares: 0.43479467258601556  
Mean error from LASSO: 0.40427302996670367  
X subset = 1 , i = 10 , j = 8

Mean error from standard least squares: 0.42758046614872364  
 Mean error from LASSO: 0.40427302996670367  
 X subset = 1 , i = 10 , j = 9  
 Mean error from standard least squares: 0.43507214206437295  
 Mean error from LASSO: 0.40427302996670367  
 X subset = 2 , i = 0 , j = 1  
 Mean error from standard least squares: 0.5022197558268591  
 Mean error from LASSO: 0.5027746947835738  
 X subset = 2 , i = 0 , j = 2  
 Mean error from standard least squares: 0.49667036625971145  
 Mean error from LASSO: 0.49056603773584906  
 X subset = 2 , i = 0 , j = 3  
 Mean error from standard least squares: 0.49278579356270813  
 Mean error from LASSO: 0.491953385127636  
 X subset = 2 , i = 0 , j = 4  
 Mean error from standard least squares: 0.48862375138734737  
 Mean error from LASSO: 0.5047169811320755  
 X subset = 2 , i = 0 , j = 5  
 Mean error from standard least squares: 0.5019422863485017  
 Mean error from LASSO: 0.5002774694783574  
 X subset = 2 , i = 0 , j = 6  
 Mean error from standard least squares: 0.4753052164261931  
 Mean error from LASSO: 0.4753052164261931  
 X subset = 2 , i = 0 , j = 7  
 Mean error from standard least squares: 0.5038845726970034  
 Mean error from LASSO: 0.5061043285238623  
 X subset = 2 , i = 0 , j = 8  
 Mean error from standard least squares: 0.48196448390677027  
 Mean error from LASSO: 0.4916759156492786  
 X subset = 2 , i = 0 , j = 9  
 Mean error from standard least squares: 0.45449500554938954  
 Mean error from LASSO: 0.44200887902330743  
 X subset = 2 , i = 0 , j = 10  
 Mean error from standard least squares: 0.45810210876803553  
 Mean error from LASSO: 0.4522752497225305  
 X subset = 2 , i = 1 , j = 0  
 Mean error from standard least squares: 0.5230299667036626  
 Mean error from LASSO: 0.5266370699223085  
 X subset = 2 , i = 1 , j = 2  
 Mean error from standard least squares: 0.49778024417314093  
 Mean error from LASSO: 0.47475027746947834  
 X subset = 2 , i = 1 , j = 3  
 Mean error from standard least squares: 0.5027746947835738  
 Mean error from LASSO: 0.4550499445061043  
 X subset = 2 , i = 1 , j = 4  
 Mean error from standard least squares: 0.5055493895671476  
 Mean error from LASSO: 0.5077691453940066  
 X subset = 2 , i = 1 , j = 5

Mean error from standard least squares: 0.5113762486126526  
 Mean error from LASSO: 0.5202552719200888  
 X subset = 2 , i = 1 , j = 6  
 Mean error from standard least squares: 0.5110987791342952  
 Mean error from LASSO: 0.5144284128745837  
 X subset = 2 , i = 1 , j = 7  
 Mean error from standard least squares: 0.5199778024417314  
 Mean error from LASSO: 0.5208102108768036  
 X subset = 2 , i = 1 , j = 8  
 Mean error from standard least squares: 0.4739178690344062  
 Mean error from LASSO: 0.47835738068812433  
 X subset = 2 , i = 1 , j = 9  
 Mean error from standard least squares: 0.4669811320754717  
 Mean error from LASSO: 0.46503884572697  
 X subset = 2 , i = 1 , j = 10  
 Mean error from standard least squares: 0.46614872364039955  
 Mean error from LASSO: 0.4223085460599334  
 X subset = 2 , i = 2 , j = 0  
 Mean error from standard least squares: 0.4830743618201998  
 Mean error from LASSO: 0.4839067702552719  
 X subset = 2 , i = 2 , j = 1  
 Mean error from standard least squares: 0.4672586015538291  
 Mean error from LASSO: 0.4683684794672586  
 X subset = 2 , i = 2 , j = 3  
 Mean error from standard least squares: 0.4800221975582686  
 Mean error from LASSO: 0.49306326304106546  
 X subset = 2 , i = 2 , j = 4  
 Mean error from standard least squares: 0.4836293007769145  
 Mean error from LASSO: 0.4841842397336293  
 X subset = 2 , i = 2 , j = 5  
 Mean error from standard least squares: 0.46059933407325193  
 Mean error from LASSO: 0.46059933407325193  
 X subset = 2 , i = 2 , j = 6  
 Mean error from standard least squares: 0.46809100998890124  
 Mean error from LASSO: 0.46781354051054386  
 X subset = 2 , i = 2 , j = 7  
 Mean error from standard least squares: 0.47891231964483905  
 Mean error from LASSO: 0.48085460599334073  
 X subset = 2 , i = 2 , j = 8  
 Mean error from standard least squares: 0.44339622641509435  
 Mean error from LASSO: 0.4422863485016648  
 X subset = 2 , i = 2 , j = 9  
 Mean error from standard least squares: 0.46198668146503885  
 Mean error from LASSO: 0.46809100998890124  
 X subset = 2 , i = 2 , j = 10  
 Mean error from standard least squares: 0.4542175360710322  
 Mean error from LASSO: 0.4572697003329634  
 X subset = 2 , i = 3 , j = 0

Mean error from standard least squares: 0.47641509433962265  
 Mean error from LASSO: 0.49667036625971145  
 X subset = 2 , i = 3 , j = 1  
 Mean error from standard least squares: 0.4675360710321865  
 Mean error from LASSO: 0.46226415094339623  
 X subset = 2 , i = 3 , j = 2  
 Mean error from standard least squares: 0.49278579356270813  
 Mean error from LASSO: 0.5019422863485017  
 X subset = 2 , i = 3 , j = 4  
 Mean error from standard least squares: 0.494173140954495  
 Mean error from LASSO: 0.5044395116537181  
 X subset = 2 , i = 3 , j = 5  
 Mean error from standard least squares: 0.4614317425083241  
 Mean error from LASSO: 0.4614317425083241  
 X subset = 2 , i = 3 , j = 6  
 Mean error from standard least squares: 0.48917869034406214  
 Mean error from LASSO: 0.48890122086570476  
 X subset = 2 , i = 3 , j = 7  
 Mean error from standard least squares: 0.47780244173140957  
 Mean error from LASSO: 0.49889012208657046  
 X subset = 2 , i = 3 , j = 8  
 Mean error from standard least squares: 0.48085460599334073  
 Mean error from LASSO: 0.48668146503884574  
 X subset = 2 , i = 3 , j = 9  
 Mean error from standard least squares: 0.4556048834628191  
 Mean error from LASSO: 0.46337402885682577  
 X subset = 2 , i = 3 , j = 10  
 Mean error from standard least squares: 0.4528301886792453  
 Mean error from LASSO: 0.46809100998890124  
 X subset = 2 , i = 4 , j = 0  
 Mean error from standard least squares: 0.5016648168701443  
 Mean error from LASSO: 0.4958379578246393  
 X subset = 2 , i = 4 , j = 1  
 Mean error from standard least squares: 0.47918978912319643  
 Mean error from LASSO: 0.4583795782463929  
 X subset = 2 , i = 4 , j = 2  
 Mean error from standard least squares: 0.47807991120976695  
 Mean error from LASSO: 0.47807991120976695  
 X subset = 2 , i = 4 , j = 3  
 Mean error from standard least squares: 0.4936182019977802  
 Mean error from LASSO: 0.49528301886792453  
 X subset = 2 , i = 4 , j = 5  
 Mean error from standard least squares: 0.4800221975582686  
 Mean error from LASSO: 0.48057713651498335  
 X subset = 2 , i = 4 , j = 6  
 Mean error from standard least squares: 0.47891231964483905  
 Mean error from LASSO: 0.47863485016648166  
 X subset = 2 , i = 4 , j = 7

Mean error from standard least squares: 0.4858490566037736  
 Mean error from LASSO: 0.4894561598224195  
 X subset = 2 , i = 4 , j = 8  
 Mean error from standard least squares: 0.4716981132075472  
 Mean error from LASSO: 0.470865704772475  
 X subset = 2 , i = 4 , j = 9  
 Mean error from standard least squares: 0.4589345172031077  
 Mean error from LASSO: 0.45810210876803553  
 X subset = 2 , i = 4 , j = 10  
 Mean error from standard least squares: 0.4447835738068812  
 Mean error from LASSO: 0.45394006659267483  
 X subset = 2 , i = 5 , j = 0  
 Mean error from standard least squares: 0.5022197558268591  
 Mean error from LASSO: 0.4972253052164262  
 X subset = 2 , i = 5 , j = 1  
 Mean error from standard least squares: 0.49778024417314093  
 Mean error from LASSO: 0.5019422863485017  
 X subset = 2 , i = 5 , j = 2  
 Mean error from standard least squares: 0.5069367369589345  
 Mean error from LASSO: 0.5091564927857936  
 X subset = 2 , i = 5 , j = 3  
 Mean error from standard least squares: 0.5044395116537181  
 Mean error from LASSO: 0.5044395116537181  
 X subset = 2 , i = 5 , j = 4  
 Mean error from standard least squares: 0.4961154273029967  
 Mean error from LASSO: 0.5008324084350722  
 X subset = 2 , i = 5 , j = 6  
 Mean error from standard least squares: 0.48335183129855713  
 Mean error from LASSO: 0.4858490566037736  
 X subset = 2 , i = 5 , j = 7  
 Mean error from standard least squares: 0.48029966703662597  
 Mean error from LASSO: 0.4841842397336293  
 X subset = 2 , i = 5 , j = 8  
 Mean error from standard least squares: 0.4586570477247503  
 Mean error from LASSO: 0.46392896781354054  
 X subset = 2 , i = 5 , j = 9  
 Mean error from standard least squares: 0.46476137624861263  
 Mean error from LASSO: 0.4614317425083241  
 X subset = 2 , i = 5 , j = 10  
 Mean error from standard least squares: 0.44367369589345174  
 Mean error from LASSO: 0.4442286348501665  
 X subset = 2 , i = 6 , j = 0  
 Mean error from standard least squares: 0.4944506104328524  
 Mean error from LASSO: 0.49250832408435075  
 X subset = 2 , i = 6 , j = 1  
 Mean error from standard least squares: 0.49694783573806883  
 Mean error from LASSO: 0.49667036625971145  
 X subset = 2 , i = 6 , j = 2

Mean error from standard least squares: 0.48501664816870144  
 Mean error from LASSO: 0.4858490566037736  
 X subset = 2 , i = 6 , j = 3  
 Mean error from standard least squares: 0.49334073251942284  
 Mean error from LASSO: 0.49306326304106546  
 X subset = 2 , i = 6 , j = 4  
 Mean error from standard least squares: 0.4975027746947836  
 Mean error from LASSO: 0.4980577136514983  
 X subset = 2 , i = 6 , j = 5  
 Mean error from standard least squares: 0.4894561598224195  
 Mean error from LASSO: 0.48473917869034405  
 X subset = 2 , i = 6 , j = 7  
 Mean error from standard least squares: 0.49223085460599336  
 Mean error from LASSO: 0.49250832408435075  
 X subset = 2 , i = 6 , j = 8  
 Mean error from standard least squares: 0.4611542730299667  
 Mean error from LASSO: 0.456992230854606  
 X subset = 2 , i = 6 , j = 9  
 Mean error from standard least squares: 0.45172031076581576  
 Mean error from LASSO: 0.4508879023307436  
 X subset = 2 , i = 6 , j = 10  
 Mean error from standard least squares: 0.43729189789123196  
 Mean error from LASSO: 0.43590455049944504  
 X subset = 2 , i = 7 , j = 0  
 Mean error from standard least squares: 0.48335183129855713  
 Mean error from LASSO: 0.4872364039955605  
 X subset = 2 , i = 7 , j = 1  
 Mean error from standard least squares: 0.47225305216426194  
 Mean error from LASSO: 0.47253052164261933  
 X subset = 2 , i = 7 , j = 2  
 Mean error from standard least squares: 0.4841842397336293  
 Mean error from LASSO: 0.4852941176470588  
 X subset = 2 , i = 7 , j = 3  
 Mean error from standard least squares: 0.49639289678135406  
 Mean error from LASSO: 0.49639289678135406  
 X subset = 2 , i = 7 , j = 4  
 Mean error from standard least squares: 0.4900110987791343  
 Mean error from LASSO: 0.4916759156492786  
 X subset = 2 , i = 7 , j = 5  
 Mean error from standard least squares: 0.4594894561598224  
 Mean error from LASSO: 0.459211986681465  
 X subset = 2 , i = 7 , j = 6  
 Mean error from standard least squares: 0.47669256381798003  
 Mean error from LASSO: 0.47613762486126526  
 X subset = 2 , i = 7 , j = 8  
 Mean error from standard least squares: 0.4594894561598224  
 Mean error from LASSO: 0.4586570477247503  
 X subset = 2 , i = 7 , j = 9



Mean error from standard least squares: 0.46059933407325193  
 Mean error from LASSO: 0.4594894561598224  
 X subset = 2 , i = 7 , j = 10  
 Mean error from standard least squares: 0.451165371809101  
 Mean error from LASSO: 0.45172031076581576  
 X subset = 2 , i = 8 , j = 0  
 Mean error from standard least squares: 0.4980577136514983  
 Mean error from LASSO: 0.4980577136514983  
 X subset = 2 , i = 8 , j = 1  
 Mean error from standard least squares: 0.4728079911209767  
 Mean error from LASSO: 0.4697558268590455  
 X subset = 2 , i = 8 , j = 2  
 Mean error from standard least squares: 0.4944506104328524  
 Mean error from LASSO: 0.4955604883462819  
 X subset = 2 , i = 8 , j = 3  
 Mean error from standard least squares: 0.48029966703662597  
 Mean error from LASSO: 0.48501664816870144  
 X subset = 2 , i = 8 , j = 4  
 Mean error from standard least squares: 0.49250832408435075  
 Mean error from LASSO: 0.49250832408435075  
 X subset = 2 , i = 8 , j = 5  
 Mean error from standard least squares: 0.4700332963374029  
 Mean error from LASSO: 0.4672586015538291  
 X subset = 2 , i = 8 , j = 6  
 Mean error from standard least squares: 0.46587125416204217  
 Mean error from LASSO: 0.46226415094339623  
 X subset = 2 , i = 8 , j = 7  
 Mean error from standard least squares: 0.4716981132075472  
 Mean error from LASSO: 0.46809100998890124  
 X subset = 2 , i = 8 , j = 9  
 Mean error from standard least squares: 0.44311875693673697  
 Mean error from LASSO: 0.44173140954495005  
 X subset = 2 , i = 8 , j = 10  
 Mean error from standard least squares: 0.43729189789123196  
 Mean error from LASSO: 0.4522752497225305  
 X subset = 2 , i = 9 , j = 0  
 Mean error from standard least squares: 0.46032186459489455  
 Mean error from LASSO: 0.46365149833518315  
 X subset = 2 , i = 9 , j = 1  
 Mean error from standard least squares: 0.4653163152053274  
 Mean error from LASSO: 0.4655937846836848  
 X subset = 2 , i = 9 , j = 2  
 Mean error from standard least squares: 0.49472807991120976  
 Mean error from LASSO: 0.4980577136514983  
 X subset = 2 , i = 9 , j = 3  
 Mean error from standard least squares: 0.4894561598224195  
 Mean error from LASSO: 0.5055493895671476  
 X subset = 2 , i = 9 , j = 4

Mean error from standard least squares: 0.4830743618201998  
 Mean error from LASSO: 0.48446170921198667  
 X subset = 2 , i = 9 , j = 5  
 Mean error from standard least squares: 0.448945615982242  
 Mean error from LASSO: 0.4470033296337403  
 X subset = 2 , i = 9 , j = 6  
 Mean error from standard least squares: 0.48446170921198667  
 Mean error from LASSO: 0.4836293007769145  
 X subset = 2 , i = 9 , j = 7  
 Mean error from standard least squares: 0.4811320754716981  
 Mean error from LASSO: 0.4811320754716981  
 X subset = 2 , i = 9 , j = 8  
 Mean error from standard least squares: 0.4481132075471698  
 Mean error from LASSO: 0.4506104328523862  
 X subset = 2 , i = 9 , j = 10  
 Mean error from standard least squares: 0.45394006659267483  
 Mean error from LASSO: 0.4583795782463929  
 X subset = 2 , i = 10 , j = 0  
 Mean error from standard least squares: 0.48473917869034405  
 Mean error from LASSO: 0.4872364039955605  
 X subset = 2 , i = 10 , j = 1  
 Mean error from standard least squares: 0.47613762486126526  
 Mean error from LASSO: 0.468645948945616  
 X subset = 2 , i = 10 , j = 2  
 Mean error from standard least squares: 0.4916759156492786  
 Mean error from LASSO: 0.5019422863485017  
 X subset = 2 , i = 10 , j = 3  
 Mean error from standard least squares: 0.49306326304106546  
 Mean error from LASSO: 0.5008324084350722  
 X subset = 2 , i = 10 , j = 4  
 Mean error from standard least squares: 0.49472807991120976  
 Mean error from LASSO: 0.5011098779134295  
 X subset = 2 , i = 10 , j = 5  
 Mean error from standard least squares: 0.46032186459489455  
 Mean error from LASSO: 0.46004439511653716  
 X subset = 2 , i = 10 , j = 6  
 Mean error from standard least squares: 0.4694783573806881  
 Mean error from LASSO: 0.4711431742508324  
 X subset = 2 , i = 10 , j = 7  
 Mean error from standard least squares: 0.4772475027746948  
 Mean error from LASSO: 0.4775249722530522  
 X subset = 2 , i = 10 , j = 8  
 Mean error from standard least squares: 0.4586570477247503  
 Mean error from LASSO: 0.4733629300776915  
 X subset = 2 , i = 10 , j = 9  
 Mean error from standard least squares: 0.4522752497225305  
 Mean error from LASSO: 0.45338512763596006  
 X subset = 3 , i = 0 , j = 1

Mean error from standard least squares: 0.4442286348501665  
 Mean error from LASSO: 0.4442286348501665  
 X subset = 3 , i = 0 , j = 2  
 Mean error from standard least squares: 0.4264705882352941  
 Mean error from LASSO: 0.42591564927857933  
 X subset = 3 , i = 0 , j = 3  
 Mean error from standard least squares: 0.462819089900111  
 Mean error from LASSO: 0.462819089900111  
 X subset = 3 , i = 0 , j = 4  
 Mean error from standard least squares: 0.4655937846836848  
 Mean error from LASSO: 0.4653163152053274  
 X subset = 3 , i = 0 , j = 5  
 Mean error from standard least squares: 0.4714206437291898  
 Mean error from LASSO: 0.4730854605993341  
 X subset = 3 , i = 0 , j = 6  
 Mean error from standard least squares: 0.4900110987791343  
 Mean error from LASSO: 0.48196448390677027  
 X subset = 3 , i = 0 , j = 7  
 Mean error from standard least squares: 0.4900110987791343  
 Mean error from LASSO: 0.4897336293007769  
 X subset = 3 , i = 0 , j = 8  
 Mean error from standard least squares: 0.49334073251942284  
 Mean error from LASSO: 0.4936182019977802  
 X subset = 3 , i = 0 , j = 9  
 Mean error from standard least squares: 0.49639289678135406  
 Mean error from LASSO: 0.4961154273029967  
 X subset = 3 , i = 0 , j = 10  
 Mean error from standard least squares: 0.4830743618201998  
 Mean error from LASSO: 0.4841842397336293  
 X subset = 3 , i = 1 , j = 0  
 Mean error from standard least squares: 0.4264705882352941  
 Mean error from LASSO: 0.42286348501664817  
 X subset = 3 , i = 1 , j = 2  
 Mean error from standard least squares: 0.42591564927857933  
 Mean error from LASSO: 0.42147613762486125  
 X subset = 3 , i = 1 , j = 3  
 Mean error from standard least squares: 0.42591564927857933  
 Mean error from LASSO: 0.42452830188679247  
 X subset = 3 , i = 1 , j = 4  
 Mean error from standard least squares: 0.46198668146503885  
 Mean error from LASSO: 0.44977802441731407  
 X subset = 3 , i = 1 , j = 5  
 Mean error from standard least squares: 0.4525527192008879  
 Mean error from LASSO: 0.4525527192008879  
 X subset = 3 , i = 1 , j = 6  
 Mean error from standard least squares: 0.4775249722530522  
 Mean error from LASSO: 0.4753052164261931  
 X subset = 3 , i = 1 , j = 7

Mean error from standard least squares: 0.4877913429522753  
 Mean error from LASSO: 0.4714206437291898  
 X subset = 3 , i = 1 , j = 8  
 Mean error from standard least squares: 0.48501664816870144  
 Mean error from LASSO: 0.47058823529411764  
 X subset = 3 , i = 1 , j = 9  
 Mean error from standard least squares: 0.4730854605993341  
 Mean error from LASSO: 0.4553274139844617  
 X subset = 3 , i = 1 , j = 10  
 Mean error from standard least squares: 0.462819089900111  
 Mean error from LASSO: 0.45394006659267483  
 X subset = 3 , i = 2 , j = 0  
 Mean error from standard least squares: 0.49278579356270813  
 Mean error from LASSO: 0.49250832408435075  
 X subset = 3 , i = 2 , j = 1  
 Mean error from standard least squares: 0.4880688124306326  
 Mean error from LASSO: 0.4880688124306326  
 X subset = 3 , i = 2 , j = 3  
 Mean error from standard least squares: 0.5152608213096559  
 Mean error from LASSO: 0.5158157602663707  
 X subset = 3 , i = 2 , j = 4  
 Mean error from standard least squares: 0.4911209766925638  
 Mean error from LASSO: 0.4911209766925638  
 X subset = 3 , i = 2 , j = 5  
 Mean error from standard least squares: 0.5344062153163152  
 Mean error from LASSO: 0.5377358490566038  
 X subset = 3 , i = 2 , j = 6  
 Mean error from standard least squares: 0.5427302996670367  
 Mean error from LASSO: 0.5418978912319645  
 X subset = 3 , i = 2 , j = 7  
 Mean error from standard least squares: 0.5513318534961155  
 Mean error from LASSO: 0.5513318534961155  
 X subset = 3 , i = 2 , j = 8  
 Mean error from standard least squares: 0.5183129855715871  
 Mean error from LASSO: 0.5177580466148723  
 X subset = 3 , i = 2 , j = 9  
 Mean error from standard least squares: 0.548834628190899  
 Mean error from LASSO: 0.5499445061043285  
 X subset = 3 , i = 2 , j = 10  
 Mean error from standard least squares: 0.5394006659267481  
 Mean error from LASSO: 0.5388457269700333  
 X subset = 3 , i = 3 , j = 0  
 Mean error from standard least squares: 0.49778024417314093  
 Mean error from LASSO: 0.4975027746947836  
 X subset = 3 , i = 3 , j = 1  
 Mean error from standard least squares: 0.48501664816870144  
 Mean error from LASSO: 0.48501664816870144  
 X subset = 3 , i = 3 , j = 2

Mean error from standard least squares: 0.48029966703662597  
 Mean error from LASSO: 0.4841842397336293  
 X subset = 3 , i = 3 , j = 4  
 Mean error from standard least squares: 0.5266370699223085  
 Mean error from LASSO: 0.5283018867924528  
 X subset = 3 , i = 3 , j = 5  
 Mean error from standard least squares: 0.5241398446170921  
 Mean error from LASSO: 0.5241398446170921  
 X subset = 3 , i = 3 , j = 6  
 Mean error from standard least squares: 0.5416204217536071  
 Mean error from LASSO: 0.5421753607103219  
 X subset = 3 , i = 3 , j = 7  
 Mean error from standard least squares: 0.5441176470588235  
 Mean error from LASSO: 0.553274139844617  
 X subset = 3 , i = 3 , j = 8  
 Mean error from standard least squares: 0.5449500554938956  
 Mean error from LASSO: 0.5471698113207547  
 X subset = 3 , i = 3 , j = 9  
 Mean error from standard least squares: 0.5554938956714761  
 Mean error from LASSO: 0.5577136514983352  
 X subset = 3 , i = 3 , j = 10  
 Mean error from standard least squares: 0.5377358490566038  
 Mean error from LASSO: 0.5374583795782464  
 X subset = 3 , i = 4 , j = 0  
 Mean error from standard least squares: 0.46420643729189787  
 Mean error from LASSO: 0.46448390677025525  
 X subset = 3 , i = 4 , j = 1  
 Mean error from standard least squares: 0.44950055493895674  
 Mean error from LASSO: 0.44922308546059936  
 X subset = 3 , i = 4 , j = 2  
 Mean error from standard least squares: 0.468645948945616  
 Mean error from LASSO: 0.4683684794672586  
 X subset = 3 , i = 4 , j = 3  
 Mean error from standard least squares: 0.4753052164261931  
 Mean error from LASSO: 0.4797447280799112  
 X subset = 3 , i = 4 , j = 4  
 Mean error from standard least squares: 0.5055493895671476  
 Mean error from LASSO: 0.5055493895671476  
 X subset = 3 , i = 4 , j = 5  
 Mean error from standard least squares: 0.5033296337402886  
 Mean error from LASSO: 0.5038845726970034  
 X subset = 3 , i = 4 , j = 6  
 Mean error from standard least squares: 0.5086015538290788  
 Mean error from LASSO: 0.5086015538290788  
 X subset = 3 , i = 4 , j = 7  
 Mean error from standard least squares: 0.519700332963374  
 Mean error from LASSO: 0.5188679245283019  
 X subset = 3 , i = 4 , j = 8  
 Mean error from standard least squares: 0.519700332963374  
 Mean error from LASSO: 0.5188679245283019  
 X subset = 3 , i = 4 , j = 9

Mean error from standard least squares: 0.5141509433962265  
 Mean error from LASSO: 0.5138734739178691  
 X subset = 3 , i = 4 , j = 10  
 Mean error from standard least squares: 0.5152608213096559  
 Mean error from LASSO: 0.5185904550499445  
 X subset = 3 , i = 5 , j = 0  
 Mean error from standard least squares: 0.43590455049944504  
 Mean error from LASSO: 0.4353496115427303  
 X subset = 3 , i = 5 , j = 1  
 Mean error from standard least squares: 0.44783573806881244  
 Mean error from LASSO: 0.4483906770255272  
 X subset = 3 , i = 5 , j = 2  
 Mean error from standard least squares: 0.44755826859045506  
 Mean error from LASSO: 0.44728079911209767  
 X subset = 3 , i = 5 , j = 3  
 Mean error from standard least squares: 0.46032186459489455  
 Mean error from LASSO: 0.46059933407325193  
 X subset = 3 , i = 5 , j = 4  
 Mean error from standard least squares: 0.4630965593784684  
 Mean error from LASSO: 0.46420643729189787  
 X subset = 3 , i = 5 , j = 6  
 Mean error from standard least squares: 0.4855715871254162  
 Mean error from LASSO: 0.48446170921198667  
 X subset = 3 , i = 5 , j = 7  
 Mean error from standard least squares: 0.49084350721420644  
 Mean error from LASSO: 0.4877913429522753  
 X subset = 3 , i = 5 , j = 8  
 Mean error from standard least squares: 0.4938956714761376  
 Mean error from LASSO: 0.49334073251942284  
 X subset = 3 , i = 5 , j = 9  
 Mean error from standard least squares: 0.5102663706992231  
 Mean error from LASSO: 0.5102663706992231  
 X subset = 3 , i = 5 , j = 10  
 Mean error from standard least squares: 0.4972253052164262  
 Mean error from LASSO: 0.49694783573806883  
 X subset = 3 , i = 6 , j = 0  
 Mean error from standard least squares: 0.4547724750277469  
 Mean error from LASSO: 0.4553274139844617  
 X subset = 3 , i = 6 , j = 1  
 Mean error from standard least squares: 0.4550499445061043  
 Mean error from LASSO: 0.4550499445061043  
 X subset = 3 , i = 6 , j = 2  
 Mean error from standard least squares: 0.43756936736958935  
 Mean error from LASSO: 0.43729189789123196  
 X subset = 3 , i = 6 , j = 3  
 Mean error from standard least squares: 0.45394006659267483  
 Mean error from LASSO: 0.45394006659267483  
 X subset = 3 , i = 6 , j = 4

Mean error from standard least squares: 0.47058823529411764  
 Mean error from LASSO: 0.470865704772475  
 X subset = 3 , i = 6 , j = 5  
 Mean error from standard least squares: 0.4667036625971143  
 Mean error from LASSO: 0.46642619311875694  
 X subset = 3 , i = 6 , j = 7  
 Mean error from standard least squares: 0.5016648168701443  
 Mean error from LASSO: 0.5013873473917869  
 X subset = 3 , i = 6 , j = 8  
 Mean error from standard least squares: 0.5047169811320755  
 Mean error from LASSO: 0.5044395116537181  
 X subset = 3 , i = 6 , j = 9  
 Mean error from standard least squares: 0.5013873473917869  
 Mean error from LASSO: 0.5011098779134295  
 X subset = 3 , i = 6 , j = 10  
 Mean error from standard least squares: 0.4897336293007769  
 Mean error from LASSO: 0.49223085460599336  
 X subset = 3 , i = 7 , j = 0  
 Mean error from standard least squares: 0.451165371809101  
 Mean error from LASSO: 0.45172031076581576  
 X subset = 3 , i = 7 , j = 1  
 Mean error from standard least squares: 0.4630965593784684  
 Mean error from LASSO: 0.4630965593784684  
 X subset = 3 , i = 7 , j = 2  
 Mean error from standard least squares: 0.4542175360710322  
 Mean error from LASSO: 0.4542175360710322  
 X subset = 3 , i = 7 , j = 3  
 Mean error from standard least squares: 0.48057713651498335  
 Mean error from LASSO: 0.48057713651498335  
 X subset = 3 , i = 7 , j = 4  
 Mean error from standard least squares: 0.48057713651498335  
 Mean error from LASSO: 0.48057713651498335  
 X subset = 3 , i = 7 , j = 5  
 Mean error from standard least squares: 0.49778024417314093  
 Mean error from LASSO: 0.49778024417314093  
 X subset = 3 , i = 7 , j = 6  
 Mean error from standard least squares: 0.5011098779134295  
 Mean error from LASSO: 0.5011098779134295  
 X subset = 3 , i = 7 , j = 8  
 Mean error from standard least squares: 0.4986126526082131  
 Mean error from LASSO: 0.4986126526082131  
 X subset = 3 , i = 7 , j = 9  
 Mean error from standard least squares: 0.5141509433962265  
 Mean error from LASSO: 0.5141509433962265  
 X subset = 3 , i = 7 , j = 10  
 Mean error from standard least squares: 0.5260821309655938  
 Mean error from LASSO: 0.5271920088790233  
 X subset = 3 , i = 8 , j = 0

Mean error from standard least squares: 0.4714206437291898  
 Mean error from LASSO: 0.4714206437291898  
 X subset = 3 , i = 8 , j = 1  
 Mean error from standard least squares: 0.462819089900111  
 Mean error from LASSO: 0.462819089900111  
 X subset = 3 , i = 8 , j = 2  
 Mean error from standard least squares: 0.4816870144284129  
 Mean error from LASSO: 0.4816870144284129  
 X subset = 3 , i = 8 , j = 3  
 Mean error from standard least squares: 0.47891231964483905  
 Mean error from LASSO: 0.47891231964483905  
 X subset = 3 , i = 8 , j = 4  
 Mean error from standard least squares: 0.47669256381798003  
 Mean error from LASSO: 0.47669256381798003  
 X subset = 3 , i = 8 , j = 5  
 Mean error from standard least squares: 0.49944506104328523  
 Mean error from LASSO: 0.5002774694783574  
 X subset = 3 , i = 8 , j = 6  
 Mean error from standard least squares: 0.5102663706992231  
 Mean error from LASSO: 0.5177580466148723  
 X subset = 3 , i = 8 , j = 7  
 Mean error from standard least squares: 0.5158157602663707  
 Mean error from LASSO: 0.516093229744728  
 X subset = 3 , i = 8 , j = 9  
 Mean error from standard least squares: 0.5133185349611543  
 Mean error from LASSO: 0.5124861265260822  
 X subset = 3 , i = 8 , j = 10  
 Mean error from standard least squares: 0.5258046614872364  
 Mean error from LASSO: 0.5271920088790233  
 X subset = 3 , i = 9 , j = 0  
 Mean error from standard least squares: 0.48251942286348504  
 Mean error from LASSO: 0.4827968923418424  
 X subset = 3 , i = 9 , j = 1  
 Mean error from standard least squares: 0.49334073251942284  
 Mean error from LASSO: 0.49334073251942284  
 X subset = 3 , i = 9 , j = 2  
 Mean error from standard least squares: 0.4955604883462819  
 Mean error from LASSO: 0.4958379578246393  
 X subset = 3 , i = 9 , j = 3  
 Mean error from standard least squares: 0.5208102108768036  
 Mean error from LASSO: 0.521087680355161  
 X subset = 3 , i = 9 , j = 4  
 Mean error from standard least squares: 0.5280244173140954  
 Mean error from LASSO: 0.5277469478357381  
 X subset = 3 , i = 9 , j = 5  
 Mean error from standard least squares: 0.5341287458379578  
 Mean error from LASSO: 0.5341287458379578  
 X subset = 3 , i = 9 , j = 6



Mean error from standard least squares: 0.5410654827968924  
Mean error from LASSO: 0.5413429522752498  
X subset = 3 , i = 9 , j = 7  
Mean error from standard least squares: 0.554661487236404  
Mean error from LASSO: 0.5554938956714761  
X subset = 3 , i = 9 , j = 8  
Mean error from standard least squares: 0.5571587125416204  
Mean error from LASSO: 0.5574361820199778  
X subset = 3 , i = 9 , j = 10  
Mean error from standard least squares: 0.5477247502774695  
Mean error from LASSO: 0.5521642619311876  
X subset = 3 , i = 10 , j = 0  
Mean error from standard least squares: 0.503607103218646  
Mean error from LASSO: 0.503607103218646  
X subset = 3 , i = 10 , j = 1  
Mean error from standard least squares: 0.4938956714761376  
Mean error from LASSO: 0.4938956714761376  
X subset = 3 , i = 10 , j = 2  
Mean error from standard least squares: 0.49306326304106546  
Mean error from LASSO: 0.49278579356270813  
X subset = 3 , i = 10 , j = 3  
Mean error from standard least squares: 0.5138734739178691  
Mean error from LASSO: 0.5149833518312985  
X subset = 3 , i = 10 , j = 4  
Mean error from standard least squares: 0.5244173140954494  
Mean error from LASSO: 0.5244173140954494  
X subset = 3 , i = 10 , j = 5  
Mean error from standard least squares: 0.5363485016648168  
Mean error from LASSO: 0.5385682574916759  
X subset = 3 , i = 10 , j = 6  
Mean error from standard least squares: 0.5610432852386238  
Mean error from LASSO: 0.5593784683684795  
X subset = 3 , i = 10 , j = 7  
Mean error from standard least squares: 0.5701997780244173  
Mean error from LASSO: 0.5701997780244173  
X subset = 3 , i = 10 , j = 8  
Mean error from standard least squares: 0.5571587125416204  
Mean error from LASSO: 0.556881243063263  
X subset = 3 , i = 10 , j = 9  
Mean error from standard least squares: 0.5510543840177581  
Mean error from LASSO: 0.5507769145394007  
X subset = 4 , i = 0 , j = 1  
Mean error from standard least squares: 0.5033296337402886  
Mean error from LASSO: 0.5038845726970034  
X subset = 4 , i = 0 , j = 2  
Mean error from standard least squares: 0.5044395116537181  
Mean error from LASSO: 0.5041620421753608  
X subset = 4 , i = 0 , j = 3

Mean error from standard least squares: 0.5052719200887902  
 Mean error from LASSO: 0.5049944506104328  
 X subset = 4 , i = 0 , j = 4  
 Mean error from standard least squares: 0.5019422863485017  
 Mean error from LASSO: 0.5044395116537181  
 X subset = 4 , i = 0 , j = 5  
 Mean error from standard least squares: 0.5016648168701443  
 Mean error from LASSO: 0.5022197558268591  
 X subset = 4 , i = 0 , j = 6  
 Mean error from standard least squares: 0.5072142064372919  
 Mean error from LASSO: 0.5072142064372919  
 X subset = 4 , i = 0 , j = 7  
 Mean error from standard least squares: 0.5061043285238623  
 Mean error from LASSO: 0.5047169811320755  
 X subset = 4 , i = 0 , j = 8  
 Mean error from standard least squares: 0.5072142064372919  
 Mean error from LASSO: 0.5030521642619312  
 X subset = 4 , i = 0 , j = 9  
 Mean error from standard least squares: 0.5091564927857936  
 Mean error from LASSO: 0.5047169811320755  
 X subset = 4 , i = 0 , j = 10  
 Mean error from standard least squares: 0.5024972253052165  
 Mean error from LASSO: 0.49944506104328523  
 X subset = 4 , i = 1 , j = 0  
 Mean error from standard least squares: 0.5430077691453941  
 Mean error from LASSO: 0.5443951165371809  
 X subset = 4 , i = 1 , j = 2  
 Mean error from standard least squares: 0.5430077691453941  
 Mean error from LASSO: 0.5460599334073252  
 X subset = 4 , i = 1 , j = 3  
 Mean error from standard least squares: 0.5338512763596004  
 Mean error from LASSO: 0.5480022197558269  
 X subset = 4 , i = 1 , j = 4  
 Mean error from standard least squares: 0.5421753607103219  
 Mean error from LASSO: 0.5463374028856826  
 X subset = 4 , i = 1 , j = 5  
 Mean error from standard least squares: 0.5480022197558269  
 Mean error from LASSO: 0.5474472807991121  
 X subset = 4 , i = 1 , j = 6  
 Mean error from standard least squares: 0.5421753607103219  
 Mean error from LASSO: 0.5418978912319645  
 X subset = 4 , i = 1 , j = 7  
 Mean error from standard least squares: 0.5443951165371809  
 Mean error from LASSO: 0.5449500554938956  
 X subset = 4 , i = 1 , j = 8  
 Mean error from standard least squares: 0.5360710321864595  
 Mean error from LASSO: 0.5332963374028857  
 X subset = 4 , i = 1 , j = 9

Mean error from standard least squares: 0.5441176470588235  
Mean error from LASSO: 0.5455049944506104  
X subset = 4 , i = 1 , j = 10  
Mean error from standard least squares: 0.5471698113207547  
Mean error from LASSO: 0.5496670366259712  
X subset = 4 , i = 2 , j = 0  
Mean error from standard least squares: 0.43174250832408434  
Mean error from LASSO: 0.40316315205327413  
X subset = 4 , i = 2 , j = 1  
Mean error from standard least squares: 0.4239733629300777  
Mean error from LASSO: 0.4051054384017758  
X subset = 4 , i = 2 , j = 3  
Mean error from standard least squares: 0.45782463928967815  
Mean error from LASSO: 0.4056603773584906  
X subset = 4 , i = 2 , j = 4  
Mean error from standard least squares: 0.4553274139844617  
Mean error from LASSO: 0.4034406215316315  
X subset = 4 , i = 2 , j = 5  
Mean error from standard least squares: 0.42730299667036625  
Mean error from LASSO: 0.40843507214206437  
X subset = 4 , i = 2 , j = 6  
Mean error from standard least squares: 0.41897891231964485  
Mean error from LASSO: 0.4056603773584906  
X subset = 4 , i = 2 , j = 7  
Mean error from standard least squares: 0.4225860155382908  
Mean error from LASSO: 0.40593784683684797  
X subset = 4 , i = 2 , j = 8  
Mean error from standard least squares: 0.4370144284128746  
Mean error from LASSO: 0.4153718091009989  
X subset = 4 , i = 2 , j = 9  
Mean error from standard least squares: 0.43923418423973365  
Mean error from LASSO: 0.42147613762486125  
X subset = 4 , i = 2 , j = 10  
Mean error from standard least squares: 0.45033296337402884  
Mean error from LASSO: 0.4306326304106548  
X subset = 4 , i = 3 , j = 0  
Mean error from standard least squares: 0.4467258601553829  
Mean error from LASSO: 0.4167591564927858  
X subset = 4 , i = 3 , j = 1  
Mean error from standard least squares: 0.4242508324084351  
Mean error from LASSO: 0.4109322974472808  
X subset = 4 , i = 3 , j = 2  
Mean error from standard least squares: 0.45810210876803553  
Mean error from LASSO: 0.41703662597114316  
X subset = 4 , i = 3 , j = 4  
Mean error from standard least squares: 0.44783573806881244  
Mean error from LASSO: 0.413984461709212  
X subset = 4 , i = 3 , j = 5

Mean error from standard least squares: 0.44006659267480575  
 Mean error from LASSO: 0.41703662597114316  
 X subset = 4 , i = 3 , j = 6  
 Mean error from standard least squares: 0.42758046614872364  
 Mean error from LASSO: 0.4159267480577136  
 X subset = 4 , i = 3 , j = 7  
 Mean error from standard least squares: 0.43784683684794673  
 Mean error from LASSO: 0.4167591564927858  
 X subset = 4 , i = 3 , j = 8  
 Mean error from standard least squares: 0.4397891231964484  
 Mean error from LASSO: 0.42563817980022195  
 X subset = 4 , i = 3 , j = 9  
 Mean error from standard least squares: 0.44755826859045506  
 Mean error from LASSO: 0.422031076581576  
 X subset = 4 , i = 3 , j = 10  
 Mean error from standard least squares: 0.45199778024417314  
 Mean error from LASSO: 0.4370144284128746  
 X subset = 4 , i = 4 , j = 0  
 Mean error from standard least squares: 0.47447280799112096  
 Mean error from LASSO: 0.46420643729189787  
 X subset = 4 , i = 4 , j = 1  
 Mean error from standard least squares: 0.4694783573806881  
 Mean error from LASSO: 0.4655937846836848  
 X subset = 4 , i = 4 , j = 2  
 Mean error from standard least squares: 0.46614872364039955  
 Mean error from LASSO: 0.46476137624861263  
 X subset = 4 , i = 4 , j = 3  
 Mean error from standard least squares: 0.47891231964483905  
 Mean error from LASSO: 0.4655937846836848  
 X subset = 4 , i = 4 , j = 4  
 Mean error from standard least squares: 0.4736403995560488  
 Mean error from LASSO: 0.46614872364039955  
 X subset = 4 , i = 4 , j = 5  
 Mean error from standard least squares: 0.4675360710321865  
 Mean error from LASSO: 0.46781354051054386  
 X subset = 4 , i = 4 , j = 6  
 Mean error from standard least squares: 0.46365149833518315  
 Mean error from LASSO: 0.46420643729189787  
 X subset = 4 , i = 4 , j = 7  
 Mean error from standard least squares: 0.46032186459489455  
 Mean error from LASSO: 0.4608768035516093  
 X subset = 4 , i = 4 , j = 8  
 Mean error from standard least squares: 0.4869589345172031  
 Mean error from LASSO: 0.4736403995560488  
 X subset = 4 , i = 4 , j = 9  
 Mean error from standard least squares: 0.47863485016648166  
 Mean error from LASSO: 0.4733629300776915  
 X subset = 4 , i = 5 , j = 0

Mean error from standard least squares: 0.5033296337402886  
 Mean error from LASSO: 0.505826859045505  
 X subset = 4 , i = 5 , j = 1  
 Mean error from standard least squares: 0.5038845726970034  
 Mean error from LASSO: 0.5049944506104328  
 X subset = 4 , i = 5 , j = 2  
 Mean error from standard least squares: 0.5013873473917869  
 Mean error from LASSO: 0.5024972253052165  
 X subset = 4 , i = 5 , j = 3  
 Mean error from standard least squares: 0.4972253052164262  
 Mean error from LASSO: 0.5072142064372919  
 X subset = 4 , i = 5 , j = 4  
 Mean error from standard least squares: 0.5113762486126526  
 Mean error from LASSO: 0.5066592674805771  
 X subset = 4 , i = 5 , j = 6  
 Mean error from standard least squares: 0.5074916759156493  
 Mean error from LASSO: 0.5072142064372919  
 X subset = 4 , i = 5 , j = 7  
 Mean error from standard least squares: 0.505826859045505  
 Mean error from LASSO: 0.503607103218646  
 X subset = 4 , i = 5 , j = 8  
 Mean error from standard least squares: 0.503607103218646  
 Mean error from LASSO: 0.5063817980022197  
 X subset = 4 , i = 5 , j = 9  
 Mean error from standard least squares: 0.5027746947835738  
 Mean error from LASSO: 0.5019422863485017  
 X subset = 4 , i = 5 , j = 10  
 Mean error from standard least squares: 0.5094339622641509  
 Mean error from LASSO: 0.5055493895671476  
 X subset = 4 , i = 6 , j = 0  
 Mean error from standard least squares: 0.49889012208657046  
 Mean error from LASSO: 0.4980577136514983  
 X subset = 4 , i = 6 , j = 1  
 Mean error from standard least squares: 0.49889012208657046  
 Mean error from LASSO: 0.5  
 X subset = 4 , i = 6 , j = 2  
 Mean error from standard least squares: 0.5030521642619312  
 Mean error from LASSO: 0.5030521642619312  
 X subset = 4 , i = 6 , j = 3  
 Mean error from standard least squares: 0.49889012208657046  
 Mean error from LASSO: 0.4972253052164262  
 X subset = 4 , i = 6 , j = 4  
 Mean error from standard least squares: 0.5069367369589345  
 Mean error from LASSO: 0.5005549389567148  
 X subset = 4 , i = 6 , j = 5  
 Mean error from standard least squares: 0.5002774694783574  
 Mean error from LASSO: 0.5011098779134295  
 X subset = 4 , i = 6 , j = 7

Mean error from standard least squares: 0.503607103218646  
 Mean error from LASSO: 0.5024972253052165  
 X subset = 4 , i = 6 , j = 8  
 Mean error from standard least squares: 0.4944506104328524  
 Mean error from LASSO: 0.49472807991120976  
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 Mean error from standard least squares: 0.5044395116537181  
 Mean error from LASSO: 0.5052719200887902  
 X subset = 4 , i = 6 , j = 10  
 Mean error from standard least squares: 0.4880688124306326  
 Mean error from LASSO: 0.4900110987791343  
 X subset = 4 , i = 7 , j = 0  
 Mean error from standard least squares: 0.46642619311875694  
 Mean error from LASSO: 0.46420643729189787  
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 Mean error from standard least squares: 0.46892341842397334  
 Mean error from LASSO: 0.4683684794672586  
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 Mean error from standard least squares: 0.47863485016648166  
 Mean error from LASSO: 0.46365149833518315  
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 Mean error from standard least squares: 0.4653163152053274  
 Mean error from LASSO: 0.462819089900111  
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 Mean error from standard least squares: 0.4683684794672586  
 Mean error from LASSO: 0.46448390677025525  
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 Mean error from standard least squares: 0.46365149833518315  
 Mean error from LASSO: 0.4655937846836848  
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 Mean error from standard least squares: 0.4669811320754717  
 Mean error from LASSO: 0.4672586015538291  
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 Mean error from standard least squares: 0.4675360710321865  
 Mean error from LASSO: 0.4692008879023307  
 X subset = 4 , i = 7 , j = 9  
 Mean error from standard least squares: 0.470865704772475  
 Mean error from LASSO: 0.4730854605993341  
 X subset = 4 , i = 7 , j = 10  
 Mean error from standard least squares: 0.4589345172031077  
 Mean error from LASSO: 0.4589345172031077  
 X subset = 4 , i = 8 , j = 0  
 Mean error from standard least squares: 0.45394006659267483  
 Mean error from LASSO: 0.4528301886792453  
 X subset = 4 , i = 8 , j = 1  
 Mean error from standard least squares: 0.4328523862375139  
 Mean error from LASSO: 0.40427302996670367  
 X subset = 4 , i = 10 , j = 5

Mean error from standard least squares: 0.42036625971143177  
 Mean error from LASSO: 0.41037735849056606  
 X subset = 4 , i = 10 , j = 6  
 Mean error from standard least squares: 0.4092674805771365  
 Mean error from LASSO: 0.408157602663707  
 X subset = 4 , i = 10 , j = 7  
 Mean error from standard least squares: 0.40871254162042175  
 Mean error from LASSO: 0.40732519422863483  
 X subset = 4 , i = 10 , j = 8  
 Mean error from standard least squares: 0.4225860155382908  
 Mean error from LASSO: 0.41453940066592676  
 X subset = 4 , i = 10 , j = 9  
 Mean error from standard least squares: 0.44145394006659266  
 Mean error from LASSO: 0.42286348501664817  
 X subset = 5 , i = 0 , j = 1  
 Mean error from standard least squares: 0.42563817980022195  
 Mean error from LASSO: 0.42563817980022195  
 X subset = 5 , i = 0 , j = 2  
 Mean error from standard least squares: 0.413984461709212  
 Mean error from LASSO: 0.413984461709212  
 X subset = 5 , i = 0 , j = 3  
 Mean error from standard least squares: 0.41897891231964485  
 Mean error from LASSO: 0.41897891231964485  
 X subset = 5 , i = 0 , j = 4  
 Mean error from standard least squares: 0.3995560488346282  
 Mean error from LASSO: 0.3995560488346282  
 X subset = 5 , i = 0 , j = 5  
 Mean error from standard least squares: 0.4181465038845727  
 Mean error from LASSO: 0.4181465038845727  
 X subset = 5 , i = 0 , j = 6  
 Mean error from standard least squares: 0.44006659267480575  
 Mean error from LASSO: 0.44006659267480575  
 X subset = 5 , i = 0 , j = 7  
 Mean error from standard least squares: 0.4309100998890122  
 Mean error from LASSO: 0.4309100998890122  
 X subset = 5 , i = 0 , j = 8  
 Mean error from standard least squares: 0.4439511653718091  
 Mean error from LASSO: 0.4439511653718091  
 X subset = 5 , i = 0 , j = 9  
 Mean error from standard least squares: 0.44034406215316313  
 Mean error from LASSO: 0.44034406215316313  
 X subset = 5 , i = 0 , j = 10  
 Mean error from standard least squares: 0.41731409544950054  
 Mean error from LASSO: 0.41731409544950054  
 X subset = 5 , i = 1 , j = 0  
 Mean error from standard least squares: 0.419811320754717  
 Mean error from LASSO: 0.419811320754717  
 X subset = 5 , i = 1 , j = 2

Mean error from standard least squares: 0.427857935627081  
 Mean error from LASSO: 0.427857935627081  
 X subset = 5 , i = 1 , j = 3  
 Mean error from standard least squares: 0.4281354051054384  
 Mean error from LASSO: 0.4281354051054384  
 X subset = 5 , i = 1 , j = 4  
 Mean error from standard least squares: 0.416204217536071  
 Mean error from LASSO: 0.416204217536071  
 X subset = 5 , i = 1 , j = 5  
 Mean error from standard least squares: 0.44922308546059936  
 Mean error from LASSO: 0.44922308546059936  
 X subset = 5 , i = 1 , j = 6  
 Mean error from standard least squares: 0.46503884572697  
 Mean error from LASSO: 0.46503884572697  
 X subset = 5 , i = 1 , j = 7  
 Mean error from standard least squares: 0.43590455049944504  
 Mean error from LASSO: 0.43590455049944504  
 X subset = 5 , i = 1 , j = 8  
 Mean error from standard least squares: 0.44339622641509435  
 Mean error from LASSO: 0.44339622641509435  
 X subset = 5 , i = 1 , j = 9  
 Mean error from standard least squares: 0.44755826859045506  
 Mean error from LASSO: 0.44755826859045506  
 X subset = 5 , i = 1 , j = 10  
 Mean error from standard least squares: 0.4320199778024417  
 Mean error from LASSO: 0.4320199778024417  
 X subset = 5 , i = 2 , j = 0  
 Mean error from standard least squares: 0.41759156492785793  
 Mean error from LASSO: 0.41759156492785793  
 X subset = 5 , i = 2 , j = 1  
 Mean error from standard least squares: 0.4034406215316315  
 Mean error from LASSO: 0.4034406215316315  
 X subset = 5 , i = 2 , j = 3  
 Mean error from standard least squares: 0.39705882352941174  
 Mean error from LASSO: 0.39705882352941174  
 X subset = 5 , i = 2 , j = 4  
 Mean error from standard least squares: 0.4076026637069922  
 Mean error from LASSO: 0.4076026637069922  
 X subset = 5 , i = 2 , j = 5  
 Mean error from standard least squares: 0.40288568257491675  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 5 , i = 2 , j = 6  
 Mean error from standard least squares: 0.3978912319644839  
 Mean error from LASSO: 0.3978912319644839  
 X subset = 5 , i = 2 , j = 7  
 Mean error from standard least squares: 0.4092674805771365  
 Mean error from LASSO: 0.4092674805771365  
 X subset = 5 , i = 2 , j = 8



Mean error from standard least squares: 0.4039955604883463  
 Mean error from LASSO: 0.4039955604883463  
 X subset = 5 , i = 2 , j = 9  
 Mean error from standard least squares: 0.3806881243063263  
 Mean error from LASSO: 0.3806881243063263  
 X subset = 5 , i = 2 , j = 10  
 Mean error from standard least squares: 0.376803551609323  
 Mean error from LASSO: 0.376803551609323  
 X subset = 5 , i = 3 , j = 0  
 Mean error from standard least squares: 0.40677025527192007  
 Mean error from LASSO: 0.40677025527192007  
 X subset = 5 , i = 3 , j = 1  
 Mean error from standard least squares: 0.41481687014428414  
 Mean error from LASSO: 0.41481687014428414  
 X subset = 5 , i = 3 , j = 2  
 Mean error from standard least squares: 0.4095449500554939  
 Mean error from LASSO: 0.4095449500554939  
 X subset = 5 , i = 3 , j = 4  
 Mean error from standard least squares: 0.39900110987791343  
 Mean error from LASSO: 0.39900110987791343  
 X subset = 5 , i = 3 , j = 5  
 Mean error from standard least squares: 0.40288568257491675  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 5 , i = 3 , j = 6  
 Mean error from standard least squares: 0.41759156492785793  
 Mean error from LASSO: 0.41759156492785793  
 X subset = 5 , i = 3 , j = 7  
 Mean error from standard least squares: 0.4120421753607103  
 Mean error from LASSO: 0.4120421753607103  
 X subset = 5 , i = 3 , j = 8  
 Mean error from standard least squares: 0.3953940066592675  
 Mean error from LASSO: 0.3953940066592675  
 X subset = 5 , i = 3 , j = 9  
 Mean error from standard least squares: 0.379023307436182  
 Mean error from LASSO: 0.379023307436182  
 X subset = 5 , i = 3 , j = 10  
 Mean error from standard least squares: 0.3776359600443951  
 Mean error from LASSO: 0.3776359600443951  
 X subset = 5 , i = 4 , j = 0  
 Mean error from standard least squares: 0.41703662597114316  
 Mean error from LASSO: 0.41703662597114316  
 X subset = 5 , i = 4 , j = 1  
 Mean error from standard least squares: 0.4298002219755827  
 Mean error from LASSO: 0.4298002219755827  
 X subset = 5 , i = 4 , j = 2  
 Mean error from standard least squares: 0.42452830188679247  
 Mean error from LASSO: 0.42452830188679247  
 X subset = 5 , i = 4 , j = 3

Mean error from standard least squares: 0.4225860155382908  
 Mean error from LASSO: 0.4225860155382908  
 X subset = 5 , i = 4 , j = 5  
 Mean error from standard least squares: 0.42286348501664817  
 Mean error from LASSO: 0.42286348501664817  
 X subset = 5 , i = 4 , j = 6  
 Mean error from standard least squares: 0.43479467258601556  
 Mean error from LASSO: 0.43479467258601556  
 X subset = 5 , i = 4 , j = 7  
 Mean error from standard least squares: 0.4100998890122087  
 Mean error from LASSO: 0.4100998890122087  
 X subset = 5 , i = 4 , j = 8  
 Mean error from standard least squares: 0.4184239733629301  
 Mean error from LASSO: 0.4184239733629301  
 X subset = 5 , i = 4 , j = 9  
 Mean error from standard least squares: 0.41065482796892344  
 Mean error from LASSO: 0.41065482796892344  
 X subset = 5 , i = 4 , j = 10  
 Mean error from standard least squares: 0.4142619311875694  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 5 , i = 5 , j = 0  
 Mean error from standard least squares: 0.40149833518312983  
 Mean error from LASSO: 0.40149833518312983  
 X subset = 5 , i = 5 , j = 1  
 Mean error from standard least squares: 0.4200887902330744  
 Mean error from LASSO: 0.4200887902330744  
 X subset = 5 , i = 5 , j = 2  
 Mean error from standard least squares: 0.4120421753607103  
 Mean error from LASSO: 0.4120421753607103  
 X subset = 5 , i = 5 , j = 3  
 Mean error from standard least squares: 0.4178690344062153  
 Mean error from LASSO: 0.4178690344062153  
 X subset = 5 , i = 5 , j = 4  
 Mean error from standard least squares: 0.4153718091009989  
 Mean error from LASSO: 0.4153718091009989  
 X subset = 5 , i = 5 , j = 6  
 Mean error from standard least squares: 0.4284128745837958  
 Mean error from LASSO: 0.4284128745837958  
 X subset = 5 , i = 5 , j = 7  
 Mean error from standard least squares: 0.44145394006659266  
 Mean error from LASSO: 0.44145394006659266  
 X subset = 5 , i = 5 , j = 8  
 Mean error from standard least squares: 0.4467258601553829  
 Mean error from LASSO: 0.4467258601553829  
 X subset = 5 , i = 5 , j = 9  
 Mean error from standard least squares: 0.4156492785793563  
 Mean error from LASSO: 0.4156492785793563  
 X subset = 5 , i = 5 , j = 10

Mean error from standard least squares: 0.41453940066592676  
 Mean error from LASSO: 0.41453940066592676  
 X subset = 5 , i = 6 , j = 0  
 Mean error from standard least squares: 0.40677025527192007  
 Mean error from LASSO: 0.40677025527192007  
 X subset = 5 , i = 6 , j = 1  
 Mean error from standard least squares: 0.427857935627081  
 Mean error from LASSO: 0.427857935627081  
 X subset = 5 , i = 6 , j = 2  
 Mean error from standard least squares: 0.4134295227524972  
 Mean error from LASSO: 0.4134295227524972  
 X subset = 5 , i = 6 , j = 3  
 Mean error from standard least squares: 0.4264705882352941  
 Mean error from LASSO: 0.4264705882352941  
 X subset = 5 , i = 6 , j = 4  
 Mean error from standard least squares: 0.4209211986681465  
 Mean error from LASSO: 0.4209211986681465  
 X subset = 5 , i = 6 , j = 5  
 Mean error from standard least squares: 0.41731409544950054  
 Mean error from LASSO: 0.41731409544950054  
 X subset = 5 , i = 6 , j = 7  
 Mean error from standard least squares: 0.4298002219755827  
 Mean error from LASSO: 0.4298002219755827  
 X subset = 5 , i = 6 , j = 8  
 Mean error from standard least squares: 0.4306326304106548  
 Mean error from LASSO: 0.4306326304106548  
 X subset = 5 , i = 6 , j = 9  
 Mean error from standard least squares: 0.40871254162042175  
 Mean error from LASSO: 0.40871254162042175  
 X subset = 5 , i = 6 , j = 10  
 Mean error from standard least squares: 0.416204217536071  
 Mean error from LASSO: 0.416204217536071  
 X subset = 5 , i = 7 , j = 0  
 Mean error from standard least squares: 0.4109322974472808  
 Mean error from LASSO: 0.4109322974472808  
 X subset = 5 , i = 7 , j = 1  
 Mean error from standard least squares: 0.42563817980022195  
 Mean error from LASSO: 0.42563817980022195  
 X subset = 5 , i = 7 , j = 2  
 Mean error from standard least squares: 0.4239733629300777  
 Mean error from LASSO: 0.4239733629300777  
 X subset = 5 , i = 7 , j = 3  
 Mean error from standard least squares: 0.41065482796892344  
 Mean error from LASSO: 0.41065482796892344  
 X subset = 5 , i = 7 , j = 4  
 Mean error from standard least squares: 0.39622641509433965  
 Mean error from LASSO: 0.39622641509433965  
 X subset = 5 , i = 7 , j = 5

Mean error from standard least squares: 0.42064372918978915  
 Mean error from LASSO: 0.42064372918978915  
 X subset = 5 , i = 7 , j = 6  
 Mean error from standard least squares: 0.41453940066592676  
 Mean error from LASSO: 0.41453940066592676  
 X subset = 5 , i = 7 , j = 8  
 Mean error from standard least squares: 0.42924528301886794  
 Mean error from LASSO: 0.42924528301886794  
 X subset = 5 , i = 7 , j = 9  
 Mean error from standard least squares: 0.3998335183129856  
 Mean error from LASSO: 0.3998335183129856  
 X subset = 5 , i = 7 , j = 10  
 Mean error from standard least squares: 0.4020532741398446  
 Mean error from LASSO: 0.4020532741398446  
 X subset = 5 , i = 8 , j = 0  
 Mean error from standard least squares: 0.4092674805771365  
 Mean error from LASSO: 0.4092674805771365  
 X subset = 5 , i = 8 , j = 1  
 Mean error from standard least squares: 0.41759156492785793  
 Mean error from LASSO: 0.41759156492785793  
 X subset = 5 , i = 8 , j = 2  
 Mean error from standard least squares: 0.4164816870144284  
 Mean error from LASSO: 0.4164816870144284  
 X subset = 5 , i = 8 , j = 3  
 Mean error from standard least squares: 0.4153718091009989  
 Mean error from LASSO: 0.4153718091009989  
 X subset = 5 , i = 8 , j = 4  
 Mean error from standard least squares: 0.3973362930077691  
 Mean error from LASSO: 0.3973362930077691  
 X subset = 5 , i = 8 , j = 5  
 Mean error from standard least squares: 0.4159267480577136  
 Mean error from LASSO: 0.4159267480577136  
 X subset = 5 , i = 8 , j = 6  
 Mean error from standard least squares: 0.41731409544950054  
 Mean error from LASSO: 0.41731409544950054  
 X subset = 5 , i = 8 , j = 7  
 Mean error from standard least squares: 0.4125971143174251  
 Mean error from LASSO: 0.4125971143174251  
 X subset = 5 , i = 8 , j = 9  
 Mean error from standard least squares: 0.4020532741398446  
 Mean error from LASSO: 0.4020532741398446  
 X subset = 5 , i = 8 , j = 10  
 Mean error from standard least squares: 0.3937291897891232  
 Mean error from LASSO: 0.3937291897891232  
 X subset = 5 , i = 9 , j = 0  
 Mean error from standard least squares: 0.40871254162042175  
 Mean error from LASSO: 0.40871254162042175  
 X subset = 5 , i = 9 , j = 1

Mean error from standard least squares: 0.41148723640399554  
 Mean error from LASSO: 0.41148723640399554  
 X subset = 5 , i = 9 , j = 2  
 Mean error from standard least squares: 0.40704772475027745  
 Mean error from LASSO: 0.40704772475027745  
 X subset = 5 , i = 9 , j = 3  
 Mean error from standard least squares: 0.3992785793562708  
 Mean error from LASSO: 0.3992785793562708  
 X subset = 5 , i = 9 , j = 4  
 Mean error from standard least squares: 0.40260821309655936  
 Mean error from LASSO: 0.40260821309655936  
 X subset = 5 , i = 9 , j = 5  
 Mean error from standard least squares: 0.3981687014428413  
 Mean error from LASSO: 0.3981687014428413  
 X subset = 5 , i = 9 , j = 6  
 Mean error from standard least squares: 0.3992785793562708  
 Mean error from LASSO: 0.3992785793562708  
 X subset = 5 , i = 9 , j = 7  
 Mean error from standard least squares: 0.3909544950055494  
 Mean error from LASSO: 0.3909544950055494  
 X subset = 5 , i = 9 , j = 8  
 Mean error from standard least squares: 0.3873473917869034  
 Mean error from LASSO: 0.3873473917869034  
 X subset = 5 , i = 9 , j = 10  
 Mean error from standard least squares: 0.3745837957824639  
 Mean error from LASSO: 0.3745837957824639  
 X subset = 5 , i = 10 , j = 0  
 Mean error from standard least squares: 0.40621531631520535  
 Mean error from LASSO: 0.40621531631520535  
 X subset = 5 , i = 10 , j = 1  
 Mean error from standard least squares: 0.41287458379578246  
 Mean error from LASSO: 0.41287458379578246  
 X subset = 5 , i = 10 , j = 2  
 Mean error from standard least squares: 0.41315205327413984  
 Mean error from LASSO: 0.41315205327413984  
 X subset = 5 , i = 10 , j = 3  
 Mean error from standard least squares: 0.4181465038845727  
 Mean error from LASSO: 0.4181465038845727  
 X subset = 5 , i = 10 , j = 4  
 Mean error from standard least squares: 0.38984461709211987  
 Mean error from LASSO: 0.38984461709211987  
 X subset = 5 , i = 10 , j = 5  
 Mean error from standard least squares: 0.39872364039955605  
 Mean error from LASSO: 0.39872364039955605  
 X subset = 5 , i = 10 , j = 6  
 Mean error from standard least squares: 0.4064927857935627  
 Mean error from LASSO: 0.4064927857935627  
 X subset = 5 , i = 10 , j = 7

Mean error from standard least squares: 0.390677025527192  
 Mean error from LASSO: 0.390677025527192  
 X subset = 5 , i = 10 , j = 8  
 Mean error from standard least squares: 0.3978912319644839  
 Mean error from LASSO: 0.3978912319644839  
 X subset = 5 , i = 10 , j = 9  
 Mean error from standard least squares: 0.3706992230854606  
 Mean error from LASSO: 0.3706992230854606  
 X subset = 6 , i = 0 , j = 1  
 Mean error from standard least squares: 0.35405105438401774  
 Mean error from LASSO: 0.35405105438401774  
 X subset = 6 , i = 0 , j = 2  
 Mean error from standard least squares: 0.3867924528301887  
 Mean error from LASSO: 0.3867924528301887  
 X subset = 6 , i = 0 , j = 3  
 Mean error from standard least squares: 0.41287458379578246  
 Mean error from LASSO: 0.41287458379578246  
 X subset = 6 , i = 0 , j = 4  
 Mean error from standard least squares: 0.4209211986681465  
 Mean error from LASSO: 0.4209211986681465  
 X subset = 6 , i = 0 , j = 5  
 Mean error from standard least squares: 0.43312985571587126  
 Mean error from LASSO: 0.43312985571587126  
 X subset = 6 , i = 0 , j = 6  
 Mean error from standard least squares: 0.4364594894561598  
 Mean error from LASSO: 0.4364594894561598  
 X subset = 6 , i = 0 , j = 7  
 Mean error from standard least squares: 0.4408990011098779  
 Mean error from LASSO: 0.4408990011098779  
 X subset = 6 , i = 0 , j = 8  
 Mean error from standard least squares: 0.422031076581576  
 Mean error from LASSO: 0.42175360710321863  
 X subset = 6 , i = 0 , j = 9  
 Mean error from standard least squares: 0.4109322974472808  
 Mean error from LASSO: 0.4109322974472808  
 X subset = 6 , i = 0 , j = 10  
 Mean error from standard least squares: 0.40621531631520535  
 Mean error from LASSO: 0.40621531631520535  
 X subset = 6 , i = 1 , j = 0  
 Mean error from standard least squares: 0.3088235294117647  
 Mean error from LASSO: 0.3088235294117647  
 X subset = 6 , i = 1 , j = 2  
 Mean error from standard least squares: 0.35987791342952274  
 Mean error from LASSO: 0.35987791342952274  
 X subset = 6 , i = 1 , j = 3  
 Mean error from standard least squares: 0.37569367369589346  
 Mean error from LASSO: 0.37569367369589346  
 X subset = 6 , i = 1 , j = 4

Mean error from standard least squares: 0.38041065482796893  
 Mean error from LASSO: 0.38041065482796893  
 X subset = 6 , i = 1 , j = 5  
 Mean error from standard least squares: 0.4009433962264151  
 Mean error from LASSO: 0.4009433962264151  
 X subset = 6 , i = 1 , j = 6  
 Mean error from standard least squares: 0.402330743618202  
 Mean error from LASSO: 0.402330743618202  
 X subset = 6 , i = 1 , j = 7  
 Mean error from standard least squares: 0.4037180910099889  
 Mean error from LASSO: 0.4037180910099889  
 X subset = 6 , i = 1 , j = 8  
 Mean error from standard least squares: 0.39261931187569366  
 Mean error from LASSO: 0.39261931187569366  
 X subset = 6 , i = 1 , j = 9  
 Mean error from standard least squares: 0.36958934517203107  
 Mean error from LASSO: 0.36958934517203107  
 X subset = 6 , i = 1 , j = 10  
 Mean error from standard least squares: 0.35960044395116536  
 Mean error from LASSO: 0.35960044395116536  
 X subset = 6 , i = 2 , j = 0  
 Mean error from standard least squares: 0.4098224195338513  
 Mean error from LASSO: 0.4098224195338513  
 X subset = 6 , i = 2 , j = 1  
 Mean error from standard least squares: 0.43340732519422864  
 Mean error from LASSO: 0.43340732519422864  
 X subset = 6 , i = 2 , j = 3  
 Mean error from standard least squares: 0.5022197558268591  
 Mean error from LASSO: 0.5022197558268591  
 X subset = 6 , i = 2 , j = 4  
 Mean error from standard least squares: 0.508046614872364  
 Mean error from LASSO: 0.508046614872364  
 X subset = 6 , i = 2 , j = 5  
 Mean error from standard least squares: 0.5258046614872364  
 Mean error from LASSO: 0.5258046614872364  
 X subset = 6 , i = 2 , j = 6  
 Mean error from standard least squares: 0.5285793562708102  
 Mean error from LASSO: 0.5285793562708102  
 X subset = 6 , i = 2 , j = 7  
 Mean error from standard least squares: 0.5330188679245284  
 Mean error from LASSO: 0.5330188679245284  
 X subset = 6 , i = 2 , j = 8  
 Mean error from standard least squares: 0.5105438401775805  
 Mean error from LASSO: 0.5108213096559379  
 X subset = 6 , i = 2 , j = 9  
 Mean error from standard least squares: 0.4944506104328524  
 Mean error from LASSO: 0.4944506104328524  
 X subset = 6 , i = 2 , j = 10

Mean error from standard least squares: 0.4811320754716981  
Mean error from LASSO: 0.4811320754716981  
X subset = 6 , i = 3 , j = 0  
Mean error from standard least squares: 0.39900110987791343  
Mean error from LASSO: 0.39900110987791343  
X subset = 6 , i = 3 , j = 1  
Mean error from standard least squares: 0.4267480577136515  
Mean error from LASSO: 0.4267480577136515  
X subset = 6 , i = 3 , j = 2  
Mean error from standard least squares: 0.4481132075471698  
Mean error from LASSO: 0.4481132075471698  
X subset = 6 , i = 3 , j = 4  
Mean error from standard least squares: 0.4958379578246393  
Mean error from LASSO: 0.4958379578246393  
X subset = 6 , i = 3 , j = 5  
Mean error from standard least squares: 0.5166481687014428  
Mean error from LASSO: 0.5166481687014428  
X subset = 6 , i = 3 , j = 6  
Mean error from standard least squares: 0.51165371809101  
Mean error from LASSO: 0.51165371809101  
X subset = 6 , i = 3 , j = 7  
Mean error from standard least squares: 0.5258046614872364  
Mean error from LASSO: 0.5258046614872364  
X subset = 6 , i = 3 , j = 8  
Mean error from standard least squares: 0.49639289678135406  
Mean error from LASSO: 0.49667036625971145  
X subset = 6 , i = 3 , j = 9  
Mean error from standard least squares: 0.4916759156492786  
Mean error from LASSO: 0.4916759156492786  
X subset = 6 , i = 3 , j = 10  
Mean error from standard least squares: 0.4733629300776915  
Mean error from LASSO: 0.4733629300776915  
X subset = 6 , i = 4 , j = 0  
Mean error from standard least squares: 0.36403995560488345  
Mean error from LASSO: 0.36403995560488345  
X subset = 6 , i = 4 , j = 1  
Mean error from standard least squares: 0.384850166481687  
Mean error from LASSO: 0.384850166481687  
X subset = 6 , i = 4 , j = 2  
Mean error from standard least squares: 0.4195338512763596  
Mean error from LASSO: 0.4195338512763596  
X subset = 6 , i = 4 , j = 3  
Mean error from standard least squares: 0.44950055493895674  
Mean error from LASSO: 0.44950055493895674  
X subset = 6 , i = 4 , j = 5  
Mean error from standard least squares: 0.47253052164261933  
Mean error from LASSO: 0.47253052164261933  
X subset = 6 , i = 4 , j = 6



Mean error from standard least squares: 0.47475027746947834  
Mean error from LASSO: 0.47475027746947834  
X subset = 6 , i = 4 , j = 7  
Mean error from standard least squares: 0.47835738068812433  
Mean error from LASSO: 0.47835738068812433  
X subset = 6 , i = 4 , j = 8  
Mean error from standard least squares: 0.4625416204217536  
Mean error from LASSO: 0.462819089900111  
X subset = 6 , i = 4 , j = 9  
Mean error from standard least squares: 0.44561598224195337  
Mean error from LASSO: 0.44561598224195337  
X subset = 6 , i = 4 , j = 10  
Mean error from standard least squares: 0.43895671476137627  
Mean error from LASSO: 0.43895671476137627  
X subset = 6 , i = 5 , j = 0  
Mean error from standard least squares: 0.3346281908990011  
Mean error from LASSO: 0.3346281908990011  
X subset = 6 , i = 5 , j = 1  
Mean error from standard least squares: 0.34988901220865704  
Mean error from LASSO: 0.34988901220865704  
X subset = 6 , i = 5 , j = 2  
Mean error from standard least squares: 0.3867924528301887  
Mean error from LASSO: 0.3867924528301887  
X subset = 6 , i = 5 , j = 3  
Mean error from standard least squares: 0.41148723640399554  
Mean error from LASSO: 0.41148723640399554  
X subset = 6 , i = 5 , j = 4  
Mean error from standard least squares: 0.41509433962264153  
Mean error from LASSO: 0.41509433962264153  
X subset = 6 , i = 5 , j = 6  
Mean error from standard least squares: 0.43590455049944504  
Mean error from LASSO: 0.43590455049944504  
X subset = 6 , i = 5 , j = 7  
Mean error from standard least squares: 0.4447835738068812  
Mean error from LASSO: 0.4447835738068812  
X subset = 6 , i = 5 , j = 8  
Mean error from standard least squares: 0.42147613762486125  
Mean error from LASSO: 0.42147613762486125  
X subset = 6 , i = 5 , j = 9  
Mean error from standard least squares: 0.40843507214206437  
Mean error from LASSO: 0.40843507214206437  
X subset = 6 , i = 5 , j = 10  
Mean error from standard least squares: 0.40038845726970035  
Mean error from LASSO: 0.40038845726970035  
X subset = 6 , i = 6 , j = 0  
Mean error from standard least squares: 0.341842397336293  
Mean error from LASSO: 0.341842397336293  
X subset = 6 , i = 6 , j = 1

Mean error from standard least squares: 0.35960044395116536  
 Mean error from LASSO: 0.35960044395116536  
 X subset = 6 , i = 6 , j = 2  
 Mean error from standard least squares: 0.38845726970033295  
 Mean error from LASSO: 0.38845726970033295  
 X subset = 6 , i = 6 , j = 3  
 Mean error from standard least squares: 0.42147613762486125  
 Mean error from LASSO: 0.42147613762486125  
 X subset = 6 , i = 6 , j = 4  
 Mean error from standard least squares: 0.42591564927857933  
 Mean error from LASSO: 0.42591564927857933  
 X subset = 6 , i = 6 , j = 5  
 Mean error from standard least squares: 0.4406215316315205  
 Mean error from LASSO: 0.4406215316315205  
 X subset = 6 , i = 6 , j = 7  
 Mean error from standard least squares: 0.4464483906770255  
 Mean error from LASSO: 0.4464483906770255  
 X subset = 6 , i = 6 , j = 8  
 Mean error from standard least squares: 0.43340732519422864  
 Mean error from LASSO: 0.43340732519422864  
 X subset = 6 , i = 6 , j = 9  
 Mean error from standard least squares: 0.41065482796892344  
 Mean error from LASSO: 0.41065482796892344  
 X subset = 6 , i = 6 , j = 10  
 Mean error from standard least squares: 0.41065482796892344  
 Mean error from LASSO: 0.41065482796892344  
 X subset = 6 , i = 7 , j = 0  
 Mean error from standard least squares: 0.36847946725860153  
 Mean error from LASSO: 0.36847946725860153  
 X subset = 6 , i = 7 , j = 1  
 Mean error from standard least squares: 0.38623751387347394  
 Mean error from LASSO: 0.38623751387347394  
 X subset = 6 , i = 7 , j = 2  
 Mean error from standard least squares: 0.4209211986681465  
 Mean error from LASSO: 0.4209211986681465  
 X subset = 6 , i = 7 , j = 3  
 Mean error from standard least squares: 0.45005549389567145  
 Mean error from LASSO: 0.45005549389567145  
 X subset = 6 , i = 7 , j = 4  
 Mean error from standard least squares: 0.4553274139844617  
 Mean error from LASSO: 0.4553274139844617  
 X subset = 6 , i = 7 , j = 5  
 Mean error from standard least squares: 0.4772475027746948  
 Mean error from LASSO: 0.4772475027746948  
 X subset = 6 , i = 7 , j = 6  
 Mean error from standard least squares: 0.47253052164261933  
 Mean error from LASSO: 0.47253052164261933  
 X subset = 6 , i = 7 , j = 8

Mean error from standard least squares: 0.4567147613762486  
Mean error from LASSO: 0.4567147613762486  
X subset = 6 , i = 7 , j = 9  
Mean error from standard least squares: 0.43951165371809103  
Mean error from LASSO: 0.43951165371809103  
X subset = 6 , i = 7 , j = 10  
Mean error from standard least squares: 0.4386792452830189  
Mean error from LASSO: 0.4386792452830189  
X subset = 6 , i = 8 , j = 0  
Mean error from standard least squares: 0.36847946725860153  
Mean error from LASSO: 0.36847946725860153  
X subset = 6 , i = 8 , j = 1  
Mean error from standard least squares: 0.3981687014428413  
Mean error from LASSO: 0.3981687014428413  
X subset = 6 , i = 8 , j = 2  
Mean error from standard least squares: 0.42341842397336293  
Mean error from LASSO: 0.42341842397336293  
X subset = 6 , i = 8 , j = 3  
Mean error from standard least squares: 0.45643729189789123  
Mean error from LASSO: 0.45643729189789123  
X subset = 6 , i = 8 , j = 4  
Mean error from standard least squares: 0.46503884572697  
Mean error from LASSO: 0.46503884572697  
X subset = 6 , i = 8 , j = 5  
Mean error from standard least squares: 0.4816870144284129  
Mean error from LASSO: 0.4816870144284129  
X subset = 6 , i = 8 , j = 6  
Mean error from standard least squares: 0.48668146503884574  
Mean error from LASSO: 0.48668146503884574  
X subset = 6 , i = 8 , j = 7  
Mean error from standard least squares: 0.4938956714761376  
Mean error from LASSO: 0.4938956714761376  
X subset = 6 , i = 8 , j = 9  
Mean error from standard least squares: 0.4597669256381798  
Mean error from LASSO: 0.4597669256381798  
X subset = 6 , i = 8 , j = 10  
Mean error from standard least squares: 0.4486681465038846  
Mean error from LASSO: 0.4486681465038846  
X subset = 6 , i = 9 , j = 0  
Mean error from standard least squares: 0.4076026637069922  
Mean error from LASSO: 0.4076026637069922  
X subset = 6 , i = 9 , j = 1  
Mean error from standard least squares: 0.42563817980022195  
Mean error from LASSO: 0.42563817980022195  
X subset = 6 , i = 9 , j = 2  
Mean error from standard least squares: 0.46503884572697  
Mean error from LASSO: 0.46503884572697  
X subset = 6 , i = 9 , j = 3

Mean error from standard least squares: 0.4955604883462819  
 Mean error from LASSO: 0.4955604883462819  
 X subset = 6 , i = 9 , j = 4  
 Mean error from standard least squares: 0.505826859045505  
 Mean error from LASSO: 0.505826859045505  
 X subset = 6 , i = 9 , j = 5  
 Mean error from standard least squares: 0.5274694783573807  
 Mean error from LASSO: 0.5274694783573807  
 X subset = 6 , i = 9 , j = 6  
 Mean error from standard least squares: 0.5269145394006659  
 Mean error from LASSO: 0.5269145394006659  
 X subset = 6 , i = 9 , j = 7  
 Mean error from standard least squares: 0.5283018867924528  
 Mean error from LASSO: 0.5283018867924528  
 X subset = 6 , i = 9 , j = 8  
 Mean error from standard least squares: 0.5049944506104328  
 Mean error from LASSO: 0.5047169811320755  
 X subset = 6 , i = 9 , j = 10  
 Mean error from standard least squares: 0.4841842397336293  
 Mean error from LASSO: 0.4841842397336293  
 X subset = 6 , i = 10 , j = 0  
 Mean error from standard least squares: 0.4100998890122087  
 Mean error from LASSO: 0.4100998890122087  
 X subset = 6 , i = 10 , j = 1  
 Mean error from standard least squares: 0.4239733629300777  
 Mean error from LASSO: 0.4239733629300777  
 X subset = 6 , i = 10 , j = 2  
 Mean error from standard least squares: 0.4630965593784684  
 Mean error from LASSO: 0.4630965593784684  
 X subset = 6 , i = 10 , j = 3  
 Mean error from standard least squares: 0.4972253052164262  
 Mean error from LASSO: 0.4972253052164262  
 X subset = 6 , i = 10 , j = 4  
 Mean error from standard least squares: 0.49916759156492785  
 Mean error from LASSO: 0.49916759156492785  
 X subset = 6 , i = 10 , j = 5  
 Mean error from standard least squares: 0.5230299667036626  
 Mean error from LASSO: 0.5230299667036626  
 X subset = 6 , i = 10 , j = 6  
 Mean error from standard least squares: 0.5266370699223085  
 Mean error from LASSO: 0.5266370699223085  
 X subset = 6 , i = 10 , j = 7  
 Mean error from standard least squares: 0.5310765815760267  
 Mean error from LASSO: 0.5310765815760267  
 X subset = 6 , i = 10 , j = 8  
 Mean error from standard least squares: 0.5072142064372919  
 Mean error from LASSO: 0.5072142064372919  
 X subset = 6 , i = 10 , j = 9

Mean error from standard least squares: 0.4894561598224195  
 Mean error from LASSO: 0.4894561598224195  
 X subset = 7 , i = 0 , j = 1  
 Mean error from standard least squares: 0.4597669256381798  
 Mean error from LASSO: 0.4597669256381798  
 X subset = 7 , i = 0 , j = 2  
 Mean error from standard least squares: 0.4769700332963374  
 Mean error from LASSO: 0.4769700332963374  
 X subset = 7 , i = 0 , j = 3  
 Mean error from standard least squares: 0.4694783573806881  
 Mean error from LASSO: 0.4694783573806881  
 X subset = 7 , i = 0 , j = 4  
 Mean error from standard least squares: 0.44755826859045506  
 Mean error from LASSO: 0.44755826859045506  
 X subset = 7 , i = 0 , j = 5  
 Mean error from standard least squares: 0.462819089900111  
 Mean error from LASSO: 0.462819089900111  
 X subset = 7 , i = 0 , j = 6  
 Mean error from standard least squares: 0.4741953385127636  
 Mean error from LASSO: 0.4741953385127636  
 X subset = 7 , i = 0 , j = 7  
 Mean error from standard least squares: 0.4741953385127636  
 Mean error from LASSO: 0.4741953385127636  
 X subset = 7 , i = 0 , j = 8  
 Mean error from standard least squares: 0.4816870144284129  
 Mean error from LASSO: 0.4816870144284129  
 X subset = 7 , i = 0 , j = 9  
 Mean error from standard least squares: 0.4692008879023307  
 Mean error from LASSO: 0.4692008879023307  
 X subset = 7 , i = 0 , j = 10  
 Mean error from standard least squares: 0.47253052164261933  
 Mean error from LASSO: 0.47253052164261933  
 X subset = 7 , i = 1 , j = 0  
 Mean error from standard least squares: 0.49472807991120976  
 Mean error from LASSO: 0.49472807991120976  
 X subset = 7 , i = 1 , j = 2  
 Mean error from standard least squares: 0.5083240843507214  
 Mean error from LASSO: 0.5083240843507214  
 X subset = 7 , i = 1 , j = 3  
 Mean error from standard least squares: 0.505826859045505  
 Mean error from LASSO: 0.505826859045505  
 X subset = 7 , i = 1 , j = 4  
 Mean error from standard least squares: 0.4897336293007769  
 Mean error from LASSO: 0.4897336293007769  
 X subset = 7 , i = 1 , j = 5  
 Mean error from standard least squares: 0.47613762486126526  
 Mean error from LASSO: 0.47613762486126526  
 X subset = 7 , i = 1 , j = 6

Mean error from standard least squares: 0.5122086570477248  
 Mean error from LASSO: 0.5122086570477248  
 X subset = 7 , i = 1 , j = 7  
 Mean error from standard least squares: 0.5047169811320755  
 Mean error from LASSO: 0.5047169811320755  
 X subset = 7 , i = 1 , j = 8  
 Mean error from standard least squares: 0.5083240843507214  
 Mean error from LASSO: 0.5083240843507214  
 X subset = 7 , i = 1 , j = 9  
 Mean error from standard least squares: 0.5005549389567148  
 Mean error from LASSO: 0.5005549389567148  
 X subset = 7 , i = 1 , j = 10  
 Mean error from standard least squares: 0.4997225305216426  
 Mean error from LASSO: 0.4997225305216426  
 X subset = 7 , i = 2 , j = 0  
 Mean error from standard least squares: 0.38623751387347394  
 Mean error from LASSO: 0.38623751387347394  
 X subset = 7 , i = 2 , j = 1  
 Mean error from standard least squares: 0.3948390677025527  
 Mean error from LASSO: 0.3948390677025527  
 X subset = 7 , i = 2 , j = 3  
 Mean error from standard least squares: 0.39261931187569366  
 Mean error from LASSO: 0.39261931187569366  
 X subset = 7 , i = 2 , j = 4  
 Mean error from standard least squares: 0.3992785793562708  
 Mean error from LASSO: 0.3992785793562708  
 X subset = 7 , i = 2 , j = 5  
 Mean error from standard least squares: 0.37846836847946724  
 Mean error from LASSO: 0.37846836847946724  
 X subset = 7 , i = 2 , j = 6  
 Mean error from standard least squares: 0.3940066592674806  
 Mean error from LASSO: 0.3940066592674806  
 X subset = 7 , i = 2 , j = 7  
 Mean error from standard least squares: 0.3831853496115427  
 Mean error from LASSO: 0.3831853496115427  
 X subset = 7 , i = 2 , j = 8  
 Mean error from standard least squares: 0.39456159822419534  
 Mean error from LASSO: 0.39456159822419534  
 X subset = 7 , i = 2 , j = 9  
 Mean error from standard least squares: 0.3865149833518313  
 Mean error from LASSO: 0.3865149833518313  
 X subset = 7 , i = 2 , j = 10  
 Mean error from standard least squares: 0.38235294117647056  
 Mean error from LASSO: 0.38235294117647056  
 X subset = 7 , i = 3 , j = 0  
 Mean error from standard least squares: 0.3934517203107658  
 Mean error from LASSO: 0.3934517203107658  
 X subset = 7 , i = 3 , j = 1

Mean error from standard least squares: 0.39900110987791343  
 Mean error from LASSO: 0.39900110987791343  
 X subset = 7 , i = 3 , j = 2  
 Mean error from standard least squares: 0.39622641509433965  
 Mean error from LASSO: 0.39622641509433965  
 X subset = 7 , i = 3 , j = 4  
 Mean error from standard least squares: 0.3934517203107658  
 Mean error from LASSO: 0.3934517203107658  
 X subset = 7 , i = 3 , j = 5  
 Mean error from standard least squares: 0.3973362930077691  
 Mean error from LASSO: 0.3973362930077691  
 X subset = 7 , i = 3 , j = 6  
 Mean error from standard least squares: 0.3940066592674806  
 Mean error from LASSO: 0.3940066592674806  
 X subset = 7 , i = 3 , j = 7  
 Mean error from standard least squares: 0.4017758046614872  
 Mean error from LASSO: 0.4017758046614872  
 X subset = 7 , i = 3 , j = 8  
 Mean error from standard least squares: 0.3951165371809101  
 Mean error from LASSO: 0.3951165371809101  
 X subset = 7 , i = 3 , j = 9  
 Mean error from standard least squares: 0.39456159822419534  
 Mean error from LASSO: 0.39456159822419534  
 X subset = 7 , i = 3 , j = 10  
 Mean error from standard least squares: 0.40427302996670367  
 Mean error from LASSO: 0.40427302996670367  
 X subset = 7 , i = 4 , j = 0  
 Mean error from standard least squares: 0.42036625971143177  
 Mean error from LASSO: 0.42036625971143177  
 X subset = 7 , i = 4 , j = 1  
 Mean error from standard least squares: 0.4295227524972253  
 Mean error from LASSO: 0.4295227524972253  
 X subset = 7 , i = 4 , j = 2  
 Mean error from standard least squares: 0.45005549389567145  
 Mean error from LASSO: 0.45005549389567145  
 X subset = 7 , i = 4 , j = 3  
 Mean error from standard least squares: 0.44783573806881244  
 Mean error from LASSO: 0.44783573806881244  
 X subset = 7 , i = 4 , j = 5  
 Mean error from standard least squares: 0.4353496115427303  
 Mean error from LASSO: 0.4353496115427303  
 X subset = 7 , i = 4 , j = 6  
 Mean error from standard least squares: 0.44034406215316313  
 Mean error from LASSO: 0.44034406215316313  
 X subset = 7 , i = 4 , j = 7  
 Mean error from standard least squares: 0.44589345172031075  
 Mean error from LASSO: 0.44589345172031075  
 X subset = 7 , i = 4 , j = 8

Mean error from standard least squares: 0.4408990011098779  
 Mean error from LASSO: 0.4408990011098779  
 X subset = 7 , i = 4 , j = 9  
 Mean error from standard least squares: 0.4422863485016648  
 Mean error from LASSO: 0.4422863485016648  
 X subset = 7 , i = 4 , j = 10  
 Mean error from standard least squares: 0.4309100998890122  
 Mean error from LASSO: 0.4309100998890122  
 X subset = 7 , i = 5 , j = 0  
 Mean error from standard least squares: 0.4714206437291898  
 Mean error from LASSO: 0.4714206437291898  
 X subset = 7 , i = 5 , j = 1  
 Mean error from standard least squares: 0.46642619311875694  
 Mean error from LASSO: 0.46642619311875694  
 X subset = 7 , i = 5 , j = 2  
 Mean error from standard least squares: 0.4852941176470588  
 Mean error from LASSO: 0.4852941176470588  
 X subset = 7 , i = 5 , j = 3  
 Mean error from standard least squares: 0.47225305216426194  
 Mean error from LASSO: 0.47225305216426194  
 X subset = 7 , i = 5 , j = 4  
 Mean error from standard least squares: 0.47641509433962265  
 Mean error from LASSO: 0.47641509433962265  
 X subset = 7 , i = 5 , j = 6  
 Mean error from standard least squares: 0.47669256381798003  
 Mean error from LASSO: 0.47669256381798003  
 X subset = 7 , i = 5 , j = 7  
 Mean error from standard least squares: 0.4669811320754717  
 Mean error from LASSO: 0.4669811320754717  
 X subset = 7 , i = 5 , j = 8  
 Mean error from standard least squares: 0.47197558268590456  
 Mean error from LASSO: 0.47197558268590456  
 X subset = 7 , i = 5 , j = 9  
 Mean error from standard least squares: 0.459211986681465  
 Mean error from LASSO: 0.459211986681465  
 X subset = 7 , i = 5 , j = 10  
 Mean error from standard least squares: 0.48335183129855713  
 Mean error from LASSO: 0.48335183129855713  
 X subset = 7 , i = 6 , j = 0  
 Mean error from standard least squares: 0.4716981132075472  
 Mean error from LASSO: 0.4716981132075472  
 X subset = 7 , i = 6 , j = 1  
 Mean error from standard least squares: 0.46781354051054386  
 Mean error from LASSO: 0.46781354051054386  
 X subset = 7 , i = 6 , j = 2  
 Mean error from standard least squares: 0.47475027746947834  
 Mean error from LASSO: 0.47475027746947834  
 X subset = 7 , i = 6 , j = 3



Mean error from standard least squares: 0.4655937846836848  
 Mean error from LASSO: 0.4655937846836848  
 X subset = 7 , i = 6 , j = 4  
 Mean error from standard least squares: 0.47031076581576026  
 Mean error from LASSO: 0.47031076581576026  
 X subset = 7 , i = 6 , j = 5  
 Mean error from standard least squares: 0.44977802441731407  
 Mean error from LASSO: 0.44977802441731407  
 X subset = 7 , i = 6 , j = 7  
 Mean error from standard least squares: 0.4614317425083241  
 Mean error from LASSO: 0.4614317425083241  
 X subset = 7 , i = 6 , j = 8  
 Mean error from standard least squares: 0.470865704772475  
 Mean error from LASSO: 0.470865704772475  
 X subset = 7 , i = 6 , j = 9  
 Mean error from standard least squares: 0.4611542730299667  
 Mean error from LASSO: 0.4611542730299667  
 X subset = 7 , i = 6 , j = 10  
 Mean error from standard least squares: 0.45643729189789123  
 Mean error from LASSO: 0.45643729189789123  
 X subset = 7 , i = 7 , j = 0  
 Mean error from standard least squares: 0.44006659267480575  
 Mean error from LASSO: 0.44006659267480575  
 X subset = 7 , i = 7 , j = 1  
 Mean error from standard least squares: 0.4397891231964484  
 Mean error from LASSO: 0.4397891231964484  
 X subset = 7 , i = 7 , j = 2  
 Mean error from standard least squares: 0.4447835738068812  
 Mean error from LASSO: 0.4447835738068812  
 X subset = 7 , i = 7 , j = 3  
 Mean error from standard least squares: 0.43729189789123196  
 Mean error from LASSO: 0.43729189789123196  
 X subset = 7 , i = 7 , j = 4  
 Mean error from standard least squares: 0.4353496115427303  
 Mean error from LASSO: 0.4353496115427303  
 X subset = 7 , i = 7 , j = 5  
 Mean error from standard least squares: 0.422031076581576  
 Mean error from LASSO: 0.422031076581576  
 X subset = 7 , i = 7 , j = 6  
 Mean error from standard least squares: 0.4447835738068812  
 Mean error from LASSO: 0.4447835738068812  
 X subset = 7 , i = 7 , j = 8  
 Mean error from standard least squares: 0.4486681465038846  
 Mean error from LASSO: 0.4486681465038846  
 X subset = 7 , i = 7 , j = 9  
 Mean error from standard least squares: 0.44617092119866814  
 Mean error from LASSO: 0.44617092119866814  
 X subset = 7 , i = 7 , j = 10

Mean error from standard least squares: 0.4309100998890122  
 Mean error from LASSO: 0.4309100998890122  
 X subset = 7 , i = 8 , j = 0  
 Mean error from standard least squares: 0.4261931187569367  
 Mean error from LASSO: 0.4261931187569367  
 X subset = 7 , i = 8 , j = 1  
 Mean error from standard least squares: 0.4281354051054384  
 Mean error from LASSO: 0.4281354051054384  
 X subset = 7 , i = 8 , j = 2  
 Mean error from standard least squares: 0.4353496115427303  
 Mean error from LASSO: 0.4353496115427303  
 X subset = 7 , i = 8 , j = 3  
 Mean error from standard least squares: 0.43146503884572696  
 Mean error from LASSO: 0.43146503884572696  
 X subset = 7 , i = 8 , j = 4  
 Mean error from standard least squares: 0.42314095449500555  
 Mean error from LASSO: 0.42314095449500555  
 X subset = 7 , i = 8 , j = 5  
 Mean error from standard least squares: 0.40316315205327413  
 Mean error from LASSO: 0.40316315205327413  
 X subset = 7 , i = 8 , j = 6  
 Mean error from standard least squares: 0.4300776914539401  
 Mean error from LASSO: 0.4300776914539401  
 X subset = 7 , i = 8 , j = 7  
 Mean error from standard least squares: 0.4236958934517203  
 Mean error from LASSO: 0.4236958934517203  
 X subset = 7 , i = 8 , j = 9  
 Mean error from standard least squares: 0.4253607103218646  
 Mean error from LASSO: 0.4253607103218646  
 X subset = 7 , i = 8 , j = 10  
 Mean error from standard least squares: 0.4295227524972253  
 Mean error from LASSO: 0.4295227524972253  
 X subset = 7 , i = 9 , j = 0  
 Mean error from standard least squares: 0.38013318534961155  
 Mean error from LASSO: 0.38013318534961155  
 X subset = 7 , i = 9 , j = 1  
 Mean error from standard least squares: 0.3895671476137625  
 Mean error from LASSO: 0.3895671476137625  
 X subset = 7 , i = 9 , j = 2  
 Mean error from standard least squares: 0.390677025527192  
 Mean error from LASSO: 0.390677025527192  
 X subset = 7 , i = 9 , j = 3  
 Mean error from standard least squares: 0.3867924528301887  
 Mean error from LASSO: 0.3867924528301887  
 X subset = 7 , i = 9 , j = 4  
 Mean error from standard least squares: 0.38290788013318533  
 Mean error from LASSO: 0.38290788013318533  
 X subset = 7 , i = 9 , j = 5

Mean error from standard least squares: 0.384850166481687  
 Mean error from LASSO: 0.384850166481687  
 X subset = 7 , i = 9 , j = 6  
 Mean error from standard least squares: 0.38623751387347394  
 Mean error from LASSO: 0.38623751387347394  
 X subset = 7 , i = 9 , j = 7  
 Mean error from standard least squares: 0.3915094339622642  
 Mean error from LASSO: 0.3915094339622642  
 X subset = 7 , i = 9 , j = 8  
 Mean error from standard least squares: 0.39012208657047726  
 Mean error from LASSO: 0.39012208657047726  
 X subset = 7 , i = 9 , j = 10  
 Mean error from standard least squares: 0.39428412874583796  
 Mean error from LASSO: 0.39428412874583796  
 X subset = 7 , i = 10 , j = 0  
 Mean error from standard least squares: 0.3892896781354051  
 Mean error from LASSO: 0.3892896781354051  
 X subset = 7 , i = 10 , j = 1  
 Mean error from standard least squares: 0.3765260821309656  
 Mean error from LASSO: 0.3765260821309656  
 X subset = 7 , i = 10 , j = 2  
 Mean error from standard least squares: 0.39456159822419534  
 Mean error from LASSO: 0.39456159822419534  
 X subset = 7 , i = 10 , j = 3  
 Mean error from standard least squares: 0.39844617092119866  
 Mean error from LASSO: 0.39844617092119866  
 X subset = 7 , i = 10 , j = 4  
 Mean error from standard least squares: 0.38457269700332963  
 Mean error from LASSO: 0.38457269700332963  
 X subset = 7 , i = 10 , j = 5  
 Mean error from standard least squares: 0.3770810210876804  
 Mean error from LASSO: 0.3770810210876804  
 X subset = 7 , i = 10 , j = 6  
 Mean error from standard least squares: 0.38623751387347394  
 Mean error from LASSO: 0.38623751387347394  
 X subset = 7 , i = 10 , j = 7  
 Mean error from standard least squares: 0.37597114317425084  
 Mean error from LASSO: 0.37597114317425084  
 X subset = 7 , i = 10 , j = 8  
 Mean error from standard least squares: 0.3779134295227525  
 Mean error from LASSO: 0.3779134295227525  
 X subset = 7 , i = 10 , j = 9  
 Mean error from standard least squares: 0.39705882352941174  
 Mean error from LASSO: 0.39705882352941174  
 X subset = 8 , i = 0 , j = 1  
 Mean error from standard least squares: 0.49944506104328523  
 Mean error from LASSO: 0.49889012208657046  
 X subset = 8 , i = 0 , j = 2

Mean error from standard least squares: 0.49223085460599336  
 Mean error from LASSO: 0.49223085460599336  
 X subset = 8 , i = 0 , j = 3  
 Mean error from standard least squares: 0.5049944506104328  
 Mean error from LASSO: 0.5041620421753608  
 X subset = 8 , i = 0 , j = 4  
 Mean error from standard least squares: 0.49639289678135406  
 Mean error from LASSO: 0.49639289678135406  
 X subset = 8 , i = 0 , j = 5  
 Mean error from standard least squares: 0.4980577136514983  
 Mean error from LASSO: 0.4983351831298557  
 X subset = 8 , i = 0 , j = 6  
 Mean error from standard least squares: 0.4958379578246393  
 Mean error from LASSO: 0.4958379578246393  
 X subset = 8 , i = 0 , j = 7  
 Mean error from standard least squares: 0.4894561598224195  
 Mean error from LASSO: 0.4894561598224195  
 X subset = 8 , i = 0 , j = 8  
 Mean error from standard least squares: 0.5011098779134295  
 Mean error from LASSO: 0.5019422863485017  
 X subset = 8 , i = 0 , j = 9  
 Mean error from standard least squares: 0.5180355160932297  
 Mean error from LASSO: 0.5185904550499445  
 X subset = 8 , i = 0 , j = 10  
 Mean error from standard least squares: 0.5013873473917869  
 Mean error from LASSO: 0.5013873473917869  
 X subset = 8 , i = 1 , j = 0  
 Mean error from standard least squares: 0.4916759156492786  
 Mean error from LASSO: 0.4916759156492786  
 X subset = 8 , i = 1 , j = 2  
 Mean error from standard least squares: 0.5124861265260822  
 Mean error from LASSO: 0.5124861265260822  
 X subset = 8 , i = 1 , j = 3  
 Mean error from standard least squares: 0.48501664816870144  
 Mean error from LASSO: 0.4852941176470588  
 X subset = 8 , i = 1 , j = 4  
 Mean error from standard least squares: 0.48335183129855713  
 Mean error from LASSO: 0.48335183129855713  
 X subset = 8 , i = 1 , j = 5  
 Mean error from standard least squares: 0.49944506104328523  
 Mean error from LASSO: 0.4997225305216426  
 X subset = 8 , i = 1 , j = 6  
 Mean error from standard least squares: 0.5288568257491676  
 Mean error from LASSO: 0.5277469478357381  
 X subset = 8 , i = 1 , j = 7  
 Mean error from standard least squares: 0.4944506104328524  
 Mean error from LASSO: 0.49500554938956715  
 X subset = 8 , i = 1 , j = 8

Mean error from standard least squares: 0.5083240843507214  
 Mean error from LASSO: 0.5083240843507214  
 X subset = 8 , i = 1 , j = 9  
 Mean error from standard least squares: 0.5235849056603774  
 Mean error from LASSO: 0.5235849056603774  
 X subset = 8 , i = 1 , j = 10  
 Mean error from standard least squares: 0.5005549389567148  
 Mean error from LASSO: 0.5008324084350722  
 X subset = 8 , i = 2 , j = 0  
 Mean error from standard least squares: 0.531354051054384  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 8 , i = 2 , j = 1  
 Mean error from standard least squares: 0.48668146503884574  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 8 , i = 2 , j = 3  
 Mean error from standard least squares: 0.5110987791342952  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 8 , i = 2 , j = 4  
 Mean error from standard least squares: 0.5219200887902331  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 8 , i = 2 , j = 5  
 Mean error from standard least squares: 0.4877913429522753  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 8 , i = 2 , j = 6  
 Mean error from standard least squares: 0.48473917869034405  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 8 , i = 2 , j = 7  
 Mean error from standard least squares: 0.4955604883462819  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 8 , i = 2 , j = 8  
 Mean error from standard least squares: 0.48917869034406214  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 8 , i = 2 , j = 9  
 Mean error from standard least squares: 0.4880688124306326  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 8 , i = 2 , j = 10  
 Mean error from standard least squares: 0.4944506104328524  
 Mean error from LASSO: 0.40288568257491675  
 X subset = 8 , i = 3 , j = 0  
 Mean error from standard least squares: 0.5061043285238623  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 8 , i = 3 , j = 1  
 Mean error from standard least squares: 0.5135960044395117  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 8 , i = 3 , j = 2  
 Mean error from standard least squares: 0.5066592674805771  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 8 , i = 3 , j = 4

Mean error from standard least squares: 0.5002774694783574  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 8 , i = 3 , j = 5  
 Mean error from standard least squares: 0.5105438401775805  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 8 , i = 3 , j = 6  
 Mean error from standard least squares: 0.49778024417314093  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 8 , i = 3 , j = 7  
 Mean error from standard least squares: 0.49778024417314093  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 8 , i = 3 , j = 8  
 Mean error from standard least squares: 0.5019422863485017  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 8 , i = 3 , j = 9  
 Mean error from standard least squares: 0.49694783573806883  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 8 , i = 3 , j = 10  
 Mean error from standard least squares: 0.4980577136514983  
 Mean error from LASSO: 0.4142619311875694  
 X subset = 8 , i = 4 , j = 0  
 Mean error from standard least squares: 0.4944506104328524  
 Mean error from LASSO: 0.4955604883462819  
 X subset = 8 , i = 4 , j = 1  
 Mean error from standard least squares: 0.491953385127636  
 Mean error from LASSO: 0.49223085460599336  
 X subset = 8 , i = 4 , j = 2  
 Mean error from standard least squares: 0.5088790233074362  
 Mean error from LASSO: 0.5088790233074362  
 X subset = 8 , i = 4 , j = 3  
 Mean error from standard least squares: 0.5094339622641509  
 Mean error from LASSO: 0.5094339622641509  
 X subset = 8 , i = 4 , j = 5  
 Mean error from standard least squares: 0.5044395116537181  
 Mean error from LASSO: 0.5044395116537181  
 X subset = 8 , i = 4 , j = 6  
 Mean error from standard least squares: 0.49778024417314093  
 Mean error from LASSO: 0.49778024417314093  
 X subset = 8 , i = 4 , j = 7  
 Mean error from standard least squares: 0.49528301886792453  
 Mean error from LASSO: 0.494173140954495  
 X subset = 8 , i = 4 , j = 8  
 Mean error from standard least squares: 0.4836293007769145  
 Mean error from LASSO: 0.47863485016648166  
 X subset = 8 , i = 4 , j = 9  
 Mean error from standard least squares: 0.49694783573806883  
 Mean error from LASSO: 0.49667036625971145  
 X subset = 8 , i = 4 , j = 10

Mean error from standard least squares: 0.5177580466148723  
 Mean error from LASSO: 0.517480577136515  
 X subset = 8 , i = 5 , j = 0  
 Mean error from standard least squares: 0.4986126526082131  
 Mean error from LASSO: 0.5002774694783574  
 X subset = 8 , i = 5 , j = 1  
 Mean error from standard least squares: 0.4830743618201998  
 Mean error from LASSO: 0.4830743618201998  
 X subset = 8 , i = 5 , j = 2  
 Mean error from standard least squares: 0.4986126526082131  
 Mean error from LASSO: 0.4983351831298557  
 X subset = 8 , i = 5 , j = 3  
 Mean error from standard least squares: 0.5069367369589345  
 Mean error from LASSO: 0.5094339622641509  
 X subset = 8 , i = 5 , j = 4  
 Mean error from standard least squares: 0.4938956714761376  
 Mean error from LASSO: 0.49250832408435075  
 X subset = 8 , i = 5 , j = 6  
 Mean error from standard least squares: 0.4958379578246393  
 Mean error from LASSO: 0.4958379578246393  
 X subset = 8 , i = 5 , j = 7  
 Mean error from standard least squares: 0.5108213096559379  
 Mean error from LASSO: 0.5108213096559379  
 X subset = 8 , i = 5 , j = 8  
 Mean error from standard least squares: 0.4961154273029967  
 Mean error from LASSO: 0.4958379578246393  
 X subset = 8 , i = 5 , j = 9  
 Mean error from standard least squares: 0.48612652608213097  
 Mean error from LASSO: 0.48612652608213097  
 X subset = 8 , i = 5 , j = 10  
 Mean error from standard least squares: 0.49639289678135406  
 Mean error from LASSO: 0.49639289678135406  
 X subset = 8 , i = 6 , j = 0  
 Mean error from standard least squares: 0.4955604883462819  
 Mean error from LASSO: 0.4955604883462819  
 X subset = 8 , i = 6 , j = 1  
 Mean error from standard least squares: 0.4938956714761376  
 Mean error from LASSO: 0.494173140954495  
 X subset = 8 , i = 6 , j = 2  
 Mean error from standard least squares: 0.5052719200887902  
 Mean error from LASSO: 0.5052719200887902  
 X subset = 8 , i = 6 , j = 3  
 Mean error from standard least squares: 0.5063817980022197  
 Mean error from LASSO: 0.5077691453940066  
 X subset = 8 , i = 6 , j = 4  
 Mean error from standard least squares: 0.4972253052164262  
 Mean error from LASSO: 0.5  
 X subset = 8 , i = 6 , j = 5

Mean error from standard least squares: 0.4958379578246393  
 Mean error from LASSO: 0.4958379578246393  
 X subset = 8 , i = 6 , j = 7  
 Mean error from standard least squares: 0.4897336293007769  
 Mean error from LASSO: 0.48917869034406214  
 X subset = 8 , i = 6 , j = 8  
 Mean error from standard least squares: 0.5110987791342952  
 Mean error from LASSO: 0.51165371809101  
 X subset = 8 , i = 6 , j = 9  
 Mean error from standard least squares: 0.48668146503884574  
 Mean error from LASSO: 0.4894561598224195  
 X subset = 8 , i = 6 , j = 10  
 Mean error from standard least squares: 0.5110987791342952  
 Mean error from LASSO: 0.5122086570477248  
 X subset = 8 , i = 7 , j = 0  
 Mean error from standard least squares: 0.4938956714761376  
 Mean error from LASSO: 0.4938956714761376  
 X subset = 8 , i = 7 , j = 1  
 Mean error from standard least squares: 0.49944506104328523  
 Mean error from LASSO: 0.49916759156492785  
 X subset = 8 , i = 7 , j = 2  
 Mean error from standard least squares: 0.5030521642619312  
 Mean error from LASSO: 0.5030521642619312  
 X subset = 8 , i = 7 , j = 3  
 Mean error from standard least squares: 0.5113762486126526  
 Mean error from LASSO: 0.5105438401775805  
 X subset = 8 , i = 7 , j = 4  
 Mean error from standard least squares: 0.4911209766925638  
 Mean error from LASSO: 0.491953385127636  
 X subset = 8 , i = 7 , j = 5  
 Mean error from standard least squares: 0.5049944506104328  
 Mean error from LASSO: 0.5041620421753608  
 X subset = 8 , i = 7 , j = 6  
 Mean error from standard least squares: 0.48917869034406214  
 Mean error from LASSO: 0.48917869034406214  
 X subset = 8 , i = 7 , j = 8  
 Mean error from standard least squares: 0.4972253052164262  
 Mean error from LASSO: 0.4972253052164262  
 X subset = 8 , i = 7 , j = 9  
 Mean error from standard least squares: 0.48917869034406214  
 Mean error from LASSO: 0.48917869034406214  
 X subset = 8 , i = 7 , j = 10  
 Mean error from standard least squares: 0.4936182019977802  
 Mean error from LASSO: 0.49334073251942284  
 X subset = 8 , i = 8 , j = 0  
 Mean error from standard least squares: 0.5127635960044395  
 Mean error from LASSO: 0.5130410654827969  
 X subset = 8 , i = 8 , j = 1



Mean error from standard least squares: 0.5013873473917869  
 Mean error from LASSO: 0.5013873473917869  
 X subset = 8 , i = 8 , j = 2  
 Mean error from standard least squares: 0.505826859045505  
 Mean error from LASSO: 0.505826859045505  
 X subset = 8 , i = 8 , j = 3  
 Mean error from standard least squares: 0.52330743618202  
 Mean error from LASSO: 0.5235849056603774  
 X subset = 8 , i = 8 , j = 4  
 Mean error from standard least squares: 0.49472807991120976  
 Mean error from LASSO: 0.49500554938956715  
 X subset = 8 , i = 8 , j = 5  
 Mean error from standard least squares: 0.5069367369589345  
 Mean error from LASSO: 0.5069367369589345  
 X subset = 8 , i = 8 , j = 6  
 Mean error from standard least squares: 0.49916759156492785  
 Mean error from LASSO: 0.49916759156492785  
 X subset = 8 , i = 8 , j = 7  
 Mean error from standard least squares: 0.4875138734739179  
 Mean error from LASSO: 0.4877913429522753  
 X subset = 8 , i = 8 , j = 9  
 Mean error from standard least squares: 0.4872364039955605  
 Mean error from LASSO: 0.4875138734739179  
 X subset = 8 , i = 8 , j = 10  
 Mean error from standard least squares: 0.49334073251942284  
 Mean error from LASSO: 0.49334073251942284  
 X subset = 8 , i = 9 , j = 0  
 Mean error from standard least squares: 0.508046614872364  
 Mean error from LASSO: 0.5083240843507214  
 X subset = 8 , i = 9 , j = 1  
 Mean error from standard least squares: 0.5141509433962265  
 Mean error from LASSO: 0.51165371809101  
 X subset = 8 , i = 9 , j = 2  
 Mean error from standard least squares: 0.5172031076581576  
 Mean error from LASSO: 0.5172031076581576  
 X subset = 8 , i = 9 , j = 3  
 Mean error from standard least squares: 0.51165371809101  
 Mean error from LASSO: 0.5038845726970034  
 X subset = 8 , i = 9 , j = 4  
 Mean error from standard least squares: 0.4972253052164262  
 Mean error from LASSO: 0.49639289678135406  
 X subset = 8 , i = 9 , j = 5  
 Mean error from standard least squares: 0.48890122086570476  
 Mean error from LASSO: 0.4900110987791343  
 X subset = 8 , i = 9 , j = 6  
 Mean error from standard least squares: 0.4858490566037736  
 Mean error from LASSO: 0.48196448390677027  
 X subset = 8 , i = 9 , j = 7

Mean error from standard least squares: 0.4755826859045505  
 Mean error from LASSO: 0.4758601553829079  
 X subset = 8 , i = 9 , j = 8  
 Mean error from standard least squares: 0.48890122086570476  
 Mean error from LASSO: 0.4836293007769145  
 X subset = 8 , i = 9 , j = 10  
 Mean error from standard least squares: 0.48446170921198667  
 Mean error from LASSO: 0.4669811320754717  
 X subset = 8 , i = 10 , j = 0  
 Mean error from standard least squares: 0.5094339622641509  
 Mean error from LASSO: 0.5088790233074362  
 X subset = 8 , i = 10 , j = 1  
 Mean error from standard least squares: 0.51165371809101  
 Mean error from LASSO: 0.4938956714761376  
 X subset = 8 , i = 10 , j = 2  
 Mean error from standard least squares: 0.5205327413984462  
 Mean error from LASSO: 0.508046614872364  
 X subset = 8 , i = 10 , j = 3  
 Mean error from standard least squares: 0.525527192008879  
 Mean error from LASSO: 0.5188679245283019  
 X subset = 8 , i = 10 , j = 4  
 Mean error from standard least squares: 0.5219200887902331  
 Mean error from LASSO: 0.5052719200887902  
 X subset = 8 , i = 10 , j = 5  
 Mean error from standard least squares: 0.4983351831298557  
 Mean error from LASSO: 0.45754716981132076  
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 Mean error from standard least squares: 0.4852941176470588  
 Mean error from LASSO: 0.47807991120976695  
 X subset = 8 , i = 10 , j = 7  
 Mean error from standard least squares: 0.48640399556048836  
 Mean error from LASSO: 0.4542175360710322  
 X subset = 8 , i = 10 , j = 8  
 Mean error from standard least squares: 0.48224195338512765  
 Mean error from LASSO: 0.462819089900111  
 X subset = 8 , i = 10 , j = 9  
 Mean error from standard least squares: 0.4772475027746948  
 Mean error from LASSO: 0.46448390677025525  
 X subset = 9 , i = 0 , j = 1  
 Mean error from standard least squares: 0.49778024417314093  
 Mean error from LASSO: 0.5002774694783574  
 X subset = 9 , i = 0 , j = 2  
 Mean error from standard least squares: 0.4841842397336293  
 Mean error from LASSO: 0.5  
 X subset = 9 , i = 0 , j = 3  
 Mean error from standard least squares: 0.5055493895671476  
 Mean error from LASSO: 0.5011098779134295  
 X subset = 9 , i = 0 , j = 4

Mean error from standard least squares: 0.4983351831298557  
 Mean error from LASSO: 0.5019422863485017  
 X subset = 9 , i = 0 , j = 5  
 Mean error from standard least squares: 0.49250832408435075  
 Mean error from LASSO: 0.494173140954495  
 X subset = 9 , i = 0 , j = 6  
 Mean error from standard least squares: 0.4997225305216426  
 Mean error from LASSO: 0.4958379578246393  
 X subset = 9 , i = 0 , j = 7  
 Mean error from standard least squares: 0.4961154273029967  
 Mean error from LASSO: 0.49694783573806883  
 X subset = 9 , i = 0 , j = 8  
 Mean error from standard least squares: 0.48057713651498335  
 Mean error from LASSO: 0.4772475027746948  
 X subset = 9 , i = 0 , j = 9  
 Mean error from standard least squares: 0.45810210876803553  
 Mean error from LASSO: 0.4597669256381798  
 X subset = 9 , i = 0 , j = 10  
 Mean error from standard least squares: 0.4481132075471698  
 Mean error from LASSO: 0.451165371809101  
 X subset = 9 , i = 1 , j = 0  
 Mean error from standard least squares: 0.5305216426193119  
 Mean error from LASSO: 0.5344062153163152  
 X subset = 9 , i = 1 , j = 2  
 Mean error from standard least squares: 0.5319089900110988  
 Mean error from LASSO: 0.5432852386237513  
 X subset = 9 , i = 1 , j = 3  
 Mean error from standard least squares: 0.5366259711431742  
 Mean error from LASSO: 0.5302441731409545  
 X subset = 9 , i = 1 , j = 4  
 Mean error from standard least squares: 0.5366259711431742  
 Mean error from LASSO: 0.5405105438401776  
 X subset = 9 , i = 1 , j = 5  
 Mean error from standard least squares: 0.5374583795782464  
 Mean error from LASSO: 0.5385682574916759  
 X subset = 9 , i = 1 , j = 6  
 Mean error from standard least squares: 0.529134295227525  
 Mean error from LASSO: 0.5324639289678136  
 X subset = 9 , i = 1 , j = 7  
 Mean error from standard least squares: 0.5396781354051055  
 Mean error from LASSO: 0.5369034406215316  
 X subset = 9 , i = 1 , j = 8  
 Mean error from standard least squares: 0.5110987791342952  
 Mean error from LASSO: 0.5119311875693674  
 X subset = 9 , i = 1 , j = 9  
 Mean error from standard least squares: 0.49306326304106546  
 Mean error from LASSO: 0.49778024417314093  
 X subset = 9 , i = 1 , j = 10

Mean error from standard least squares: 0.49334073251942284  
 Mean error from LASSO: 0.4916759156492786  
 X subset = 9 , i = 2 , j = 0  
 Mean error from standard least squares: 0.44006659267480575  
 Mean error from LASSO: 0.39900110987791343  
 X subset = 9 , i = 2 , j = 1  
 Mean error from standard least squares: 0.42591564927857933  
 Mean error from LASSO: 0.40038845726970035  
 X subset = 9 , i = 2 , j = 3  
 Mean error from standard least squares: 0.46587125416204217  
 Mean error from LASSO: 0.4009433962264151  
 X subset = 9 , i = 2 , j = 4  
 Mean error from standard least squares: 0.43951165371809103  
 Mean error from LASSO: 0.4009433962264151  
 X subset = 9 , i = 2 , j = 5  
 Mean error from standard least squares: 0.42508324084350724  
 Mean error from LASSO: 0.39678135405105436  
 X subset = 9 , i = 2 , j = 6  
 Mean error from standard least squares: 0.41315205327413984  
 Mean error from LASSO: 0.39456159822419534  
 X subset = 9 , i = 2 , j = 7  
 Mean error from standard least squares: 0.4223085460599334  
 Mean error from LASSO: 0.3973362930077691  
 X subset = 9 , i = 2 , j = 8  
 Mean error from standard least squares: 0.40732519422863483  
 Mean error from LASSO: 0.3831853496115427  
 X subset = 9 , i = 2 , j = 9  
 Mean error from standard least squares: 0.40260821309655936  
 Mean error from LASSO: 0.36764705882352944  
 X subset = 9 , i = 2 , j = 10  
 Mean error from standard least squares: 0.4159267480577136  
 Mean error from LASSO: 0.3662597114317425  
 X subset = 9 , i = 3 , j = 0  
 Mean error from standard least squares: 0.44200887902330743  
 Mean error from LASSO: 0.41148723640399554  
 X subset = 9 , i = 3 , j = 1  
 Mean error from standard least squares: 0.43590455049944504  
 Mean error from LASSO: 0.40899001109877914  
 X subset = 9 , i = 3 , j = 2  
 Mean error from standard least squares: 0.48834628190899  
 Mean error from LASSO: 0.41148723640399554  
 X subset = 9 , i = 3 , j = 4  
 Mean error from standard least squares: 0.4397891231964484  
 Mean error from LASSO: 0.4117647058823529  
 X subset = 9 , i = 3 , j = 5  
 Mean error from standard least squares: 0.4328523862375139  
 Mean error from LASSO: 0.40677025527192007  
 X subset = 9 , i = 3 , j = 6

Mean error from standard least squares: 0.4261931187569367  
 Mean error from LASSO: 0.4053829078801332  
 X subset = 9 , i = 3 , j = 7  
 Mean error from standard least squares: 0.4361820199778024  
 Mean error from LASSO: 0.40843507214206437  
 X subset = 9 , i = 3 , j = 8  
 Mean error from standard least squares: 0.419811320754717  
 Mean error from LASSO: 0.3940066592674806  
 X subset = 9 , i = 3 , j = 9  
 Mean error from standard least squares: 0.4034406215316315  
 Mean error from LASSO: 0.3737513873473918  
 X subset = 9 , i = 3 , j = 10  
 Mean error from standard least squares: 0.3981687014428413  
 Mean error from LASSO: 0.3748612652608213  
 X subset = 9 , i = 4 , j = 0  
 Mean error from standard least squares: 0.4714206437291898  
 Mean error from LASSO: 0.4597669256381798  
 X subset = 9 , i = 4 , j = 1  
 Mean error from standard least squares: 0.4653163152053274  
 Mean error from LASSO: 0.4614317425083241  
 X subset = 9 , i = 4 , j = 2  
 Mean error from standard least squares: 0.46892341842397334  
 Mean error from LASSO: 0.46032186459489455  
 X subset = 9 , i = 4 , j = 3  
 Mean error from standard least squares: 0.4894561598224195  
 Mean error from LASSO: 0.46170921198668147  
 X subset = 9 , i = 4 , j = 5  
 Mean error from standard least squares: 0.4653163152053274  
 Mean error from LASSO: 0.45643729189789123  
 X subset = 9 , i = 4 , j = 6  
 Mean error from standard least squares: 0.4630965593784684  
 Mean error from LASSO: 0.45643729189789123  
 X subset = 9 , i = 4 , j = 7  
 Mean error from standard least squares: 0.4583795782463929  
 Mean error from LASSO: 0.4572697003329634  
 X subset = 9 , i = 4 , j = 8  
 Mean error from standard least squares: 0.4447835738068812  
 Mean error from LASSO: 0.4367369589345172  
 X subset = 9 , i = 4 , j = 9  
 Mean error from standard least squares: 0.43174250832408434  
 Mean error from LASSO: 0.42452830188679247  
 X subset = 9 , i = 4 , j = 10  
 Mean error from standard least squares: 0.43312985571587126  
 Mean error from LASSO: 0.4184239733629301  
 X subset = 9 , i = 5 , j = 0  
 Mean error from standard least squares: 0.48890122086570476  
 Mean error from LASSO: 0.5019422863485017  
 X subset = 9 , i = 5 , j = 1

Mean error from standard least squares: 0.5019422863485017  
 Mean error from LASSO: 0.5022197558268591  
 X subset = 9 , i = 5 , j = 2  
 Mean error from standard least squares: 0.491953385127636  
 Mean error from LASSO: 0.5008324084350722  
 X subset = 9 , i = 5 , j = 3  
 Mean error from standard least squares: 0.49916759156492785  
 Mean error from LASSO: 0.49916759156492785  
 X subset = 9 , i = 5 , j = 4  
 Mean error from standard least squares: 0.5066592674805771  
 Mean error from LASSO: 0.5044395116537181  
 X subset = 9 , i = 5 , j = 6  
 Mean error from standard least squares: 0.4897336293007769  
 Mean error from LASSO: 0.491953385127636  
 X subset = 9 , i = 5 , j = 7  
 Mean error from standard least squares: 0.5030521642619312  
 Mean error from LASSO: 0.49778024417314093  
 X subset = 9 , i = 5 , j = 8  
 Mean error from standard least squares: 0.4816870144284129  
 Mean error from LASSO: 0.4800221975582686  
 X subset = 9 , i = 5 , j = 9  
 Mean error from standard least squares: 0.45588235294117646  
 Mean error from LASSO: 0.4594894561598224  
 X subset = 9 , i = 5 , j = 10  
 Mean error from standard least squares: 0.4508879023307436  
 Mean error from LASSO: 0.4506104328523862  
 X subset = 9 , i = 6 , j = 0  
 Mean error from standard least squares: 0.49500554938956715  
 Mean error from LASSO: 0.49250832408435075  
 X subset = 9 , i = 6 , j = 1  
 Mean error from standard least squares: 0.49056603773584906  
 Mean error from LASSO: 0.4938956714761376  
 X subset = 9 , i = 6 , j = 2  
 Mean error from standard least squares: 0.4980577136514983  
 Mean error from LASSO: 0.48890122086570476  
 X subset = 9 , i = 6 , j = 3  
 Mean error from standard least squares: 0.49306326304106546  
 Mean error from LASSO: 0.49778024417314093  
 X subset = 9 , i = 6 , j = 4  
 Mean error from standard least squares: 0.4916759156492786  
 Mean error from LASSO: 0.49250832408435075  
 X subset = 9 , i = 6 , j = 5  
 Mean error from standard least squares: 0.49278579356270813  
 Mean error from LASSO: 0.4872364039955605  
 X subset = 9 , i = 6 , j = 7  
 Mean error from standard least squares: 0.4872364039955605  
 Mean error from LASSO: 0.4894561598224195  
 X subset = 9 , i = 6 , j = 8

Mean error from standard least squares: 0.4692008879023307  
 Mean error from LASSO: 0.46809100998890124  
 X subset = 9 , i = 6 , j = 9  
 Mean error from standard least squares: 0.45782463928967815  
 Mean error from LASSO: 0.45810210876803553  
 X subset = 9 , i = 6 , j = 10  
 Mean error from standard least squares: 0.45588235294117646  
 Mean error from LASSO: 0.45338512763596006  
 X subset = 9 , i = 7 , j = 0  
 Mean error from standard least squares: 0.46892341842397334  
 Mean error from LASSO: 0.46032186459489455  
 X subset = 9 , i = 7 , j = 1  
 Mean error from standard least squares: 0.4614317425083241  
 Mean error from LASSO: 0.462819089900111  
 X subset = 9 , i = 7 , j = 2  
 Mean error from standard least squares: 0.4692008879023307  
 Mean error from LASSO: 0.4614317425083241  
 X subset = 9 , i = 7 , j = 3  
 Mean error from standard least squares: 0.47475027746947834  
 Mean error from LASSO: 0.46032186459489455  
 X subset = 9 , i = 7 , j = 4  
 Mean error from standard least squares: 0.4683684794672586  
 Mean error from LASSO: 0.46226415094339623  
 X subset = 9 , i = 7 , j = 5  
 Mean error from standard least squares: 0.4594894561598224  
 Mean error from LASSO: 0.45615982241953384  
 X subset = 9 , i = 7 , j = 6  
 Mean error from standard least squares: 0.4567147613762486  
 Mean error from LASSO: 0.45615982241953384  
 X subset = 9 , i = 7 , j = 8  
 Mean error from standard least squares: 0.43951165371809103  
 Mean error from LASSO: 0.4406215316315205  
 X subset = 9 , i = 7 , j = 9  
 Mean error from standard least squares: 0.4303551609322974  
 Mean error from LASSO: 0.4242508324084351  
 X subset = 9 , i = 7 , j = 10  
 Mean error from standard least squares: 0.42036625971143177  
 Mean error from LASSO: 0.4156492785793563  
 X subset = 9 , i = 8 , j = 0  
 Mean error from standard least squares: 0.46004439511653716  
 Mean error from LASSO: 0.4481132075471698  
 X subset = 9 , i = 8 , j = 1  
 Mean error from standard least squares: 0.4464483906770255  
 Mean error from LASSO: 0.4483906770255272  
 X subset = 9 , i = 8 , j = 2  
 Mean error from standard least squares: 0.4547724750277469  
 Mean error from LASSO: 0.44728079911209767  
 X subset = 9 , i = 8 , j = 3

Mean error from standard least squares: 0.4800221975582686  
 Mean error from LASSO: 0.44783573806881244  
 X subset = 9 , i = 8 , j = 4  
 Mean error from standard least squares: 0.45754716981132076  
 Mean error from LASSO: 0.45005549389567145  
 X subset = 9 , i = 8 , j = 5  
 Mean error from standard least squares: 0.4514428412874584  
 Mean error from LASSO: 0.4439511653718091  
 X subset = 9 , i = 8 , j = 6  
 Mean error from standard least squares: 0.4442286348501665  
 Mean error from LASSO: 0.44034406215316313  
 X subset = 9 , i = 8 , j = 7  
 Mean error from standard least squares: 0.44977802441731407  
 Mean error from LASSO: 0.44339622641509435  
 X subset = 9 , i = 8 , j = 9  
 Mean error from standard least squares: 0.413984461709212  
 Mean error from LASSO: 0.40732519422863483  
 X subset = 9 , i = 8 , j = 10  
 Mean error from standard least squares: 0.40482796892341844  
 Mean error from LASSO: 0.40316315205327413  
 X subset = 9 , i = 9 , j = 0  
 Mean error from standard least squares: 0.4295227524972253  
 Mean error from LASSO: 0.42924528301886794  
 X subset = 9 , i = 9 , j = 1  
 Mean error from standard least squares: 0.419811320754717  
 Mean error from LASSO: 0.40011098779134296  
 X subset = 9 , i = 9 , j = 2  
 Mean error from standard least squares: 0.4542175360710322  
 Mean error from LASSO: 0.40149833518312983  
 X subset = 9 , i = 9 , j = 3  
 Mean error from standard least squares: 0.46059933407325193  
 Mean error from LASSO: 0.40011098779134296  
 X subset = 9 , i = 9 , j = 4  
 Mean error from standard least squares: 0.4328523862375139  
 Mean error from LASSO: 0.4267480577136515  
 X subset = 9 , i = 9 , j = 5  
 Mean error from standard least squares: 0.4109322974472808  
 Mean error from LASSO: 0.408157602663707  
 X subset = 9 , i = 9 , j = 6  
 Mean error from standard least squares: 0.40038845726970035  
 Mean error from LASSO: 0.4009433962264151  
 X subset = 9 , i = 9 , j = 7  
 Mean error from standard least squares: 0.416204217536071  
 Mean error from LASSO: 0.41481687014428414  
 X subset = 9 , i = 9 , j = 8  
 Mean error from standard least squares: 0.3981687014428413  
 Mean error from LASSO: 0.39678135405105436  
 X subset = 9 , i = 9 , j = 10



Mean error from standard least squares: 0.3809655937846837  
 Mean error from LASSO: 0.37264150943396224  
 X subset = 9 , i = 10 , j = 0  
 Mean error from standard least squares: 0.4306326304106548  
 Mean error from LASSO: 0.4009433962264151  
 X subset = 9 , i = 10 , j = 1  
 Mean error from standard least squares: 0.4178690344062153  
 Mean error from LASSO: 0.4053829078801332  
 X subset = 9 , i = 10 , j = 2  
 Mean error from standard least squares: 0.4589345172031077  
 Mean error from LASSO: 0.4020532741398446  
 X subset = 9 , i = 10 , j = 3  
 Mean error from standard least squares: 0.46392896781354054  
 Mean error from LASSO: 0.4056603773584906  
 X subset = 9 , i = 10 , j = 4  
 Mean error from standard least squares: 0.4239733629300777  
 Mean error from LASSO: 0.4020532741398446  
 X subset = 9 , i = 10 , j = 5  
 Mean error from standard least squares: 0.4134295227524972  
 Mean error from LASSO: 0.39844617092119866  
 X subset = 9 , i = 10 , j = 6  
 Mean error from standard least squares: 0.4095449500554939  
 Mean error from LASSO: 0.3992785793562708  
 X subset = 9 , i = 10 , j = 7  
 Mean error from standard least squares: 0.4100998890122087  
 Mean error from LASSO: 0.39872364039955605  
 X subset = 9 , i = 10 , j = 8  
 Mean error from standard least squares: 0.4017758046614872  
 Mean error from LASSO: 0.3831853496115427  
 X subset = 9 , i = 10 , j = 9  
 Mean error from standard least squares: 0.38873473917869034  
 Mean error from LASSO: 0.3690344062153163  
 X subset = 10 , i = 0 , j = 1  
 Mean error from standard least squares: 0.5013873473917869  
 Mean error from LASSO: 0.4975027746947836  
 X subset = 10 , i = 0 , j = 2  
 Mean error from standard least squares: 0.5044395116537181  
 Mean error from LASSO: 0.4894561598224195  
 X subset = 10 , i = 0 , j = 3  
 Mean error from standard least squares: 0.4980577136514983  
 Mean error from LASSO: 0.49889012208657046  
 X subset = 10 , i = 0 , j = 4  
 Mean error from standard least squares: 0.4958379578246393  
 Mean error from LASSO: 0.5011098779134295  
 X subset = 10 , i = 0 , j = 5  
 Mean error from standard least squares: 0.4936182019977802  
 Mean error from LASSO: 0.4955604883462819  
 X subset = 10 , i = 0 , j = 6

Mean error from standard least squares: 0.49694783573806883  
Mean error from LASSO: 0.4980577136514983  
X subset = 10 , i = 0 , j = 7  
Mean error from standard least squares: 0.5074916759156493  
Mean error from LASSO: 0.5  
X subset = 10 , i = 0 , j = 8  
Mean error from standard least squares: 0.47863485016648166  
Mean error from LASSO: 0.4794672586015538  
X subset = 10 , i = 0 , j = 9  
Mean error from standard least squares: 0.4553274139844617  
Mean error from LASSO: 0.4572697003329634  
X subset = 10 , i = 0 , j = 10  
Mean error from standard least squares: 0.4542175360710322  
Mean error from LASSO: 0.45172031076581576  
X subset = 10 , i = 1 , j = 0  
Mean error from standard least squares: 0.5338512763596004  
Mean error from LASSO: 0.5357935627081021  
X subset = 10 , i = 1 , j = 2  
Mean error from standard least squares: 0.5294117647058824  
Mean error from LASSO: 0.5316315205327414  
X subset = 10 , i = 1 , j = 3  
Mean error from standard least squares: 0.5194228634850167  
Mean error from LASSO: 0.5274694783573807  
X subset = 10 , i = 1 , j = 4  
Mean error from standard least squares: 0.5227524972253053  
Mean error from LASSO: 0.5263596004439511  
X subset = 10 , i = 1 , j = 5  
Mean error from standard least squares: 0.5382907880133185  
Mean error from LASSO: 0.5385682574916759  
X subset = 10 , i = 1 , j = 6  
Mean error from standard least squares: 0.529134295227525  
Mean error from LASSO: 0.5302441731409545  
X subset = 10 , i = 1 , j = 7  
Mean error from standard least squares: 0.5269145394006659  
Mean error from LASSO: 0.529134295227525  
X subset = 10 , i = 1 , j = 8  
Mean error from standard least squares: 0.5091564927857936  
Mean error from LASSO: 0.5141509433962265  
X subset = 10 , i = 1 , j = 9  
Mean error from standard least squares: 0.4916759156492786  
Mean error from LASSO: 0.49250832408435075  
X subset = 10 , i = 1 , j = 10  
Mean error from standard least squares: 0.47780244173140957  
Mean error from LASSO: 0.4811320754716981  
X subset = 10 , i = 2 , j = 0  
Mean error from standard least squares: 0.44755826859045506  
Mean error from LASSO: 0.39900110987791343  
X subset = 10 , i = 2 , j = 1

Mean error from standard least squares: 0.4364594894561598  
 Mean error from LASSO: 0.40011098779134296  
 X subset = 10 , i = 2 , j = 3  
 Mean error from standard least squares: 0.46642619311875694  
 Mean error from LASSO: 0.40843507214206437  
 X subset = 10 , i = 2 , j = 4  
 Mean error from standard least squares: 0.4586570477247503  
 Mean error from LASSO: 0.4009433962264151  
 X subset = 10 , i = 2 , j = 5  
 Mean error from standard least squares: 0.42563817980022195  
 Mean error from LASSO: 0.39678135405105436  
 X subset = 10 , i = 2 , j = 6  
 Mean error from standard least squares: 0.4225860155382908  
 Mean error from LASSO: 0.39456159822419534  
 X subset = 10 , i = 2 , j = 7  
 Mean error from standard least squares: 0.4303551609322974  
 Mean error from LASSO: 0.3973362930077691  
 X subset = 10 , i = 2 , j = 8  
 Mean error from standard least squares: 0.3998335183129856  
 Mean error from LASSO: 0.38235294117647056  
 X subset = 10 , i = 2 , j = 9  
 Mean error from standard least squares: 0.41453940066592676  
 Mean error from LASSO: 0.36736958934517205  
 X subset = 10 , i = 2 , j = 10  
 Mean error from standard least squares: 0.40593784683684797  
 Mean error from LASSO: 0.36598224195338513  
 X subset = 10 , i = 3 , j = 0  
 Mean error from standard least squares: 0.44561598224195337  
 Mean error from LASSO: 0.41148723640399554  
 X subset = 10 , i = 3 , j = 1  
 Mean error from standard least squares: 0.4264705882352941  
 Mean error from LASSO: 0.40899001109877914  
 X subset = 10 , i = 3 , j = 2  
 Mean error from standard least squares: 0.4672586015538291  
 Mean error from LASSO: 0.42563817980022195  
 X subset = 10 , i = 3 , j = 4  
 Mean error from standard least squares: 0.4583795782463929  
 Mean error from LASSO: 0.4117647058823529  
 X subset = 10 , i = 3 , j = 5  
 Mean error from standard least squares: 0.451165371809101  
 Mean error from LASSO: 0.40677025527192007  
 X subset = 10 , i = 3 , j = 6  
 Mean error from standard least squares: 0.4370144284128746  
 Mean error from LASSO: 0.4053829078801332  
 X subset = 10 , i = 3 , j = 7  
 Mean error from standard least squares: 0.44311875693673697  
 Mean error from LASSO: 0.40843507214206437  
 X subset = 10 , i = 3 , j = 8

Mean error from standard least squares: 0.4225860155382908  
 Mean error from LASSO: 0.3940066592674806  
 X subset = 10 , i = 3 , j = 9  
 Mean error from standard least squares: 0.4078801331853496  
 Mean error from LASSO: 0.3737513873473918  
 X subset = 10 , i = 3 , j = 10  
 Mean error from standard least squares: 0.4078801331853496  
 Mean error from LASSO: 0.3748612652608213  
 X subset = 10 , i = 4 , j = 0  
 Mean error from standard least squares: 0.4700332963374029  
 Mean error from LASSO: 0.4625416204217536  
 X subset = 10 , i = 4 , j = 1  
 Mean error from standard least squares: 0.4692008879023307  
 Mean error from LASSO: 0.46448390677025525  
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 Mean error from standard least squares: 0.47225305216426194  
 Mean error from LASSO: 0.4714206437291898  
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 Mean error from standard least squares: 0.4916759156492786  
 Mean error from LASSO: 0.48251942286348504  
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 Mean error from standard least squares: 0.4625416204217536  
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 Mean error from LASSO: 0.4700332963374029  
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 Mean error from LASSO: 0.44783573806881244  
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 Mean error from LASSO: 0.4325749167591565  
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 Mean error from standard least squares: 0.43923418423973365  
 Mean error from LASSO: 0.4370144284128746  
 X subset = 10 , i = 5 , j = 0  
 Mean error from standard least squares: 0.49056603773584906  
 Mean error from LASSO: 0.5  
 X subset = 10 , i = 5 , j = 1  
 Mean error from standard least squares: 0.5041620421753608  
 Mean error from LASSO: 0.49944506104328523  
 X subset = 10 , i = 5 , j = 2  
 Mean error from standard least squares: 0.49056603773584906  
 Mean error from LASSO: 0.4986126526082131  
 X subset = 10 , i = 5 , j = 3

Mean error from standard least squares: 0.5033296337402886  
 Mean error from LASSO: 0.5055493895671476  
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 Mean error from standard least squares: 0.4938956714761376  
 Mean error from LASSO: 0.49056603773584906  
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 Mean error from standard least squares: 0.49250832408435075  
 Mean error from LASSO: 0.49472807991120976  
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 Mean error from standard least squares: 0.4877913429522753  
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 Mean error from standard least squares: 0.4583795782463929  
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 Mean error from standard least squares: 0.45199778024417314  
 Mean error from LASSO: 0.45394006659267483  
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 Mean error from LASSO: 0.5005549389567148  
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 Mean error from standard least squares: 0.4961154273029967  
 Mean error from LASSO: 0.4916759156492786  
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 Mean error from standard least squares: 0.5024972253052165  
 Mean error from LASSO: 0.49528301886792453  
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 Mean error from standard least squares: 0.4972253052164262  
 Mean error from LASSO: 0.5008324084350722  
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 Mean error from standard least squares: 0.49667036625971145  
 Mean error from LASSO: 0.4997225305216426  
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 Mean error from standard least squares: 0.4869589345172031  
 Mean error from LASSO: 0.4869589345172031  
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 Mean error from standard least squares: 0.46503884572697  
 Mean error from LASSO: 0.46587125416204217  
 X subset = 10 , i = 6 , j = 9  
 Mean error from standard least squares: 0.46004439511653716  
 Mean error from LASSO: 0.4608768035516093  
 X subset = 10 , i = 6 , j = 10

Mean error from standard least squares: 0.4531076581576027  
 Mean error from LASSO: 0.45005549389567145  
 X subset = 10 , i = 7 , j = 0  
 Mean error from standard least squares: 0.47253052164261933  
 Mean error from LASSO: 0.4716981132075472  
 X subset = 10 , i = 7 , j = 1  
 Mean error from standard least squares: 0.4630965593784684  
 Mean error from LASSO: 0.4653163152053274  
 X subset = 10 , i = 7 , j = 2  
 Mean error from standard least squares: 0.47891231964483905  
 Mean error from LASSO: 0.4739178690344062  
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 Mean error from standard least squares: 0.4758601553829079  
 Mean error from LASSO: 0.47197558268590456  
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 Mean error from standard least squares: 0.4736403995560488  
 Mean error from LASSO: 0.4697558268590455  
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 Mean error from standard least squares: 0.4653163152053274  
 Mean error from LASSO: 0.4597669256381798  
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 Mean error from standard least squares: 0.4716981132075472  
 Mean error from LASSO: 0.46059933407325193  
 X subset = 10 , i = 7 , j = 8  
 Mean error from standard least squares: 0.4422863485016648  
 Mean error from LASSO: 0.44145394006659266  
 X subset = 10 , i = 7 , j = 9  
 Mean error from standard least squares: 0.427857935627081  
 Mean error from LASSO: 0.42147613762486125  
 X subset = 10 , i = 7 , j = 10  
 Mean error from standard least squares: 0.42758046614872364  
 Mean error from LASSO: 0.42508324084350724  
 X subset = 10 , i = 8 , j = 0  
 Mean error from standard least squares: 0.46809100998890124  
 Mean error from LASSO: 0.4694783573806881  
 X subset = 10 , i = 8 , j = 1  
 Mean error from standard least squares: 0.4572697003329634  
 Mean error from LASSO: 0.4547724750277469  
 X subset = 10 , i = 8 , j = 2  
 Mean error from standard least squares: 0.4692008879023307  
 Mean error from LASSO: 0.46448390677025525  
 X subset = 10 , i = 8 , j = 3  
 Mean error from standard least squares: 0.46503884572697  
 Mean error from LASSO: 0.46476137624861263  
 X subset = 10 , i = 8 , j = 4  
 Mean error from standard least squares: 0.48057713651498335  
 Mean error from LASSO: 0.47225305216426194  
 X subset = 10 , i = 8 , j = 5

Mean error from standard least squares: 0.4525527192008879  
 Mean error from LASSO: 0.4542175360710322  
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 Mean error from standard least squares: 0.448945615982242  
 Mean error from LASSO: 0.44755826859045506  
 X subset = 10 , i = 8 , j = 7  
 Mean error from standard least squares: 0.4589345172031077  
 Mean error from LASSO: 0.45449500554938954  
 X subset = 10 , i = 8 , j = 9  
 Mean error from standard least squares: 0.41897891231964485  
 Mean error from LASSO: 0.42480577136514985  
 X subset = 10 , i = 8 , j = 10  
 Mean error from standard least squares: 0.4134295227524972  
 Mean error from LASSO: 0.4053829078801332  
 X subset = 10 , i = 9 , j = 0  
 Mean error from standard least squares: 0.44034406215316313  
 Mean error from LASSO: 0.4309100998890122  
 X subset = 10 , i = 9 , j = 1  
 Mean error from standard least squares: 0.4200887902330744  
 Mean error from LASSO: 0.4076026637069922  
 X subset = 10 , i = 9 , j = 2  
 Mean error from standard least squares: 0.459211986681465  
 Mean error from LASSO: 0.4447835738068812  
 X subset = 10 , i = 9 , j = 3  
 Mean error from standard least squares: 0.4611542730299667  
 Mean error from LASSO: 0.4481132075471698  
 X subset = 10 , i = 9 , j = 4  
 Mean error from standard least squares: 0.4553274139844617  
 Mean error from LASSO: 0.44617092119866814  
 X subset = 10 , i = 9 , j = 5  
 Mean error from standard least squares: 0.42758046614872364  
 Mean error from LASSO: 0.4153718091009989  
 X subset = 10 , i = 9 , j = 6  
 Mean error from standard least squares: 0.4125971143174251  
 Mean error from LASSO: 0.3948390677025527  
 X subset = 10 , i = 9 , j = 7  
 Mean error from standard least squares: 0.4303551609322974  
 Mean error from LASSO: 0.3992785793562708  
 X subset = 10 , i = 9 , j = 8  
 Mean error from standard least squares: 0.42119866814650386  
 Mean error from LASSO: 0.40593784683684797  
 X subset = 10 , i = 9 , j = 10  
 Mean error from standard least squares: 0.4051054384017758  
 Mean error from LASSO: 0.36403995560488345  
 X subset = 10 , i = 10 , j = 0  
 Mean error from standard least squares: 0.4408990011098779  
 Mean error from LASSO: 0.4397891231964484  
 X subset = 10 , i = 10 , j = 1

Mean error from standard least squares: 0.42730299667036625  
 Mean error from LASSO: 0.408157602663707  
 X subset = 10 , i = 10 , j = 2  
 Mean error from standard least squares: 0.4630965593784684  
 Mean error from LASSO: 0.4009433962264151  
 X subset = 10 , i = 10 , j = 3  
 Mean error from standard least squares: 0.46448390677025525  
 Mean error from LASSO: 0.4012208657047725  
 X subset = 10 , i = 10 , j = 4  
 Mean error from standard least squares: 0.44145394006659266  
 Mean error from LASSO: 0.4303551609322974  
 X subset = 10 , i = 10 , j = 5  
 Mean error from standard least squares: 0.42896781354051056  
 Mean error from LASSO: 0.42591564927857933  
 X subset = 10 , i = 10 , j = 6  
 Mean error from standard least squares: 0.42119866814650386  
 Mean error from LASSO: 0.4134295227524972  
 X subset = 10 , i = 10 , j = 7  
 Mean error from standard least squares: 0.42064372918978915  
 Mean error from LASSO: 0.4200887902330744  
 X subset = 10 , i = 10 , j = 8  
 Mean error from standard least squares: 0.4156492785793563  
 Mean error from LASSO: 0.3981687014428413  
 X subset = 10 , i = 10 , j = 9  
 Mean error from standard least squares: 0.40260821309655936  
 Mean error from LASSO: 0.38207547169811323  
 X subset = 11 , i = 0 , j = 1  
 Mean error from standard least squares: 0.505826859045505  
 Mean error from LASSO: 0.505826859045505  
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 Mean error from standard least squares: 0.4980577136514983  
 Mean error from LASSO: 0.4980577136514983  
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 Mean error from LASSO: 0.5108213096559379  
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 Mean error from LASSO: 0.5072142064372919  
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 Mean error from LASSO: 0.49334073251942284  
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 Mean error from standard least squares: 0.5077691453940066  
 Mean error from LASSO: 0.5074916759156493  
 X subset = 11 , i = 0 , j = 7  
 Mean error from standard least squares: 0.49944506104328523  
 Mean error from LASSO: 0.49944506104328523  
 X subset = 11 , i = 0 , j = 8



Mean error from standard least squares: 0.5180355160932297  
 Mean error from LASSO: 0.5177580466148723  
 X subset = 11 , i = 0 , j = 9  
 Mean error from standard least squares: 0.5055493895671476  
 Mean error from LASSO: 0.505826859045505  
 X subset = 11 , i = 0 , j = 10  
 Mean error from standard least squares: 0.5169256381798002  
 Mean error from LASSO: 0.517480577136515  
 X subset = 11 , i = 1 , j = 0  
 Mean error from standard least squares: 0.5360710321864595  
 Mean error from LASSO: 0.5357935627081021  
 X subset = 11 , i = 1 , j = 2  
 Mean error from standard least squares: 0.5238623751387348  
 Mean error from LASSO: 0.5238623751387348  
 X subset = 11 , i = 1 , j = 3  
 Mean error from standard least squares: 0.5363485016648168  
 Mean error from LASSO: 0.5366259711431742  
 X subset = 11 , i = 1 , j = 4  
 Mean error from standard least squares: 0.5258046614872364  
 Mean error from LASSO: 0.5258046614872364  
 X subset = 11 , i = 1 , j = 5  
 Mean error from standard least squares: 0.5416204217536071  
 Mean error from LASSO: 0.5416204217536071  
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 Mean error from standard least squares: 0.5321864594894562  
 Mean error from LASSO: 0.5324639289678136  
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 Mean error from LASSO: 0.5435627081021087  
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 Mean error from LASSO: 0.529134295227525  
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 Mean error from standard least squares: 0.532741398446171  
 Mean error from LASSO: 0.5307991120976693  
 X subset = 11 , i = 2 , j = 0  
 Mean error from standard least squares: 0.4553274139844617  
 Mean error from LASSO: 0.4236958934517203  
 X subset = 11 , i = 2 , j = 1  
 Mean error from standard least squares: 0.43174250832408434  
 Mean error from LASSO: 0.41120976692563815  
 X subset = 11 , i = 2 , j = 3  
 Mean error from standard least squares: 0.4583795782463929  
 Mean error from LASSO: 0.4583795782463929  
 X subset = 11 , i = 2 , j = 4

Mean error from standard least squares: 0.4525527192008879  
 Mean error from LASSO: 0.4264705882352941  
 X subset = 11 , i = 2 , j = 5  
 Mean error from standard least squares: 0.45172031076581576  
 Mean error from LASSO: 0.427857935627081  
 X subset = 11 , i = 2 , j = 6  
 Mean error from standard least squares: 0.4345172031076582  
 Mean error from LASSO: 0.41453940066592676  
 X subset = 11 , i = 2 , j = 7  
 Mean error from standard least squares: 0.43895671476137627  
 Mean error from LASSO: 0.4298002219755827  
 X subset = 11 , i = 2 , j = 8  
 Mean error from standard least squares: 0.43312985571587126  
 Mean error from LASSO: 0.4342397336293008  
 X subset = 11 , i = 2 , j = 9  
 Mean error from standard least squares: 0.4514428412874584  
 Mean error from LASSO: 0.43562708102108766  
 X subset = 11 , i = 2 , j = 10  
 Mean error from standard least squares: 0.45172031076581576  
 Mean error from LASSO: 0.43118756936736957  
 X subset = 11 , i = 3 , j = 0  
 Mean error from standard least squares: 0.4550499445061043  
 Mean error from LASSO: 0.4367369589345172  
 X subset = 11 , i = 3 , j = 1  
 Mean error from standard least squares: 0.4422863485016648  
 Mean error from LASSO: 0.4223085460599334  
 X subset = 11 , i = 3 , j = 2  
 Mean error from standard least squares: 0.46642619311875694  
 Mean error from LASSO: 0.45588235294117646  
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 Mean error from standard least squares: 0.45643729189789123  
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 Mean error from standard least squares: 0.46032186459489455  
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 Mean error from standard least squares: 0.44200887902330743  
 Mean error from LASSO: 0.4345172031076582  
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 Mean error from standard least squares: 0.45338512763596006  
 Mean error from LASSO: 0.4386792452830189  
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 Mean error from standard least squares: 0.4528301886792453  
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 Mean error from LASSO: 0.44589345172031075  
 X subset = 11 , i = 3 , j = 10

Mean error from standard least squares: 0.459211986681465  
 Mean error from LASSO: 0.44922308546059936  
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 Mean error from standard least squares: 0.4733629300776915  
 Mean error from LASSO: 0.4733629300776915  
 X subset = 11 , i = 4 , j = 1  
 Mean error from standard least squares: 0.4902885682574917  
 Mean error from LASSO: 0.4900110987791343  
 X subset = 11 , i = 4 , j = 2  
 Mean error from standard least squares: 0.48612652608213097  
 Mean error from LASSO: 0.4730854605993341  
 X subset = 11 , i = 4 , j = 3  
 Mean error from standard least squares: 0.48473917869034405  
 Mean error from LASSO: 0.48501664816870144  
 X subset = 11 , i = 4 , j = 5  
 Mean error from standard least squares: 0.4741953385127636  
 Mean error from LASSO: 0.47447280799112096  
 X subset = 11 , i = 4 , j = 6  
 Mean error from standard least squares: 0.4755826859045505  
 Mean error from LASSO: 0.47613762486126526  
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 Mean error from standard least squares: 0.4728079911209767  
 Mean error from LASSO: 0.4733629300776915  
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 Mean error from standard least squares: 0.47780244173140957  
 Mean error from LASSO: 0.47780244173140957  
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 Mean error from standard least squares: 0.4875138734739179  
 Mean error from LASSO: 0.46781354051054386  
 X subset = 11 , i = 4 , j = 10  
 Mean error from standard least squares: 0.4811320754716981  
 Mean error from LASSO: 0.46503884572697  
 X subset = 11 , i = 5 , j = 0  
 Mean error from standard least squares: 0.4955604883462819  
 Mean error from LASSO: 0.4972253052164262  
 X subset = 11 , i = 5 , j = 1  
 Mean error from standard least squares: 0.49639289678135406  
 Mean error from LASSO: 0.49472807991120976  
 X subset = 11 , i = 5 , j = 2  
 Mean error from standard least squares: 0.49528301886792453  
 Mean error from LASSO: 0.4955604883462819  
 X subset = 11 , i = 5 , j = 3  
 Mean error from standard least squares: 0.5083240843507214  
 Mean error from LASSO: 0.5119311875693674  
 X subset = 11 , i = 5 , j = 4  
 Mean error from standard least squares: 0.5052719200887902  
 Mean error from LASSO: 0.5052719200887902  
 X subset = 11 , i = 5 , j = 6

Mean error from standard least squares: 0.5049944506104328  
 Mean error from LASSO: 0.5086015538290788  
 X subset = 11 , i = 5 , j = 7  
 Mean error from standard least squares: 0.49639289678135406  
 Mean error from LASSO: 0.49639289678135406  
 X subset = 11 , i = 5 , j = 8  
 Mean error from standard least squares: 0.5011098779134295  
 Mean error from LASSO: 0.5005549389567148  
 X subset = 11 , i = 5 , j = 9  
 Mean error from standard least squares: 0.5086015538290788  
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 Mean error from standard least squares: 0.5083240843507214  
 Mean error from LASSO: 0.5072142064372919  
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Mean error from standard least squares: 0.47475027746947834  
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 Mean error from standard least squares: 0.47669256381798003  
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 Mean error from standard least squares: 0.4655937846836848  
 Mean error from LASSO: 0.46420643729189787  
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Mean error from standard least squares: 0.4730854605993341  
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Mean error from standard least squares: 0.4653163152053274  
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Mean error from LASSO: 0.42480577136514985  
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X subset = 11 , i = 9 , j = 2  
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Mean error from LASSO: 0.4483906770255272  
X subset = 11 , i = 9 , j = 3  
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Mean error from standard least squares: 0.4325749167591565  
Mean error from LASSO: 0.43340732519422864  
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Mean error from LASSO: 0.4159267480577136  
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Mean error from standard least squares: 0.45588235294117646  
Mean error from LASSO: 0.4553274139844617  
X subset = 11 , i = 10 , j = 3

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Mean error from standard least squares: 0.46392896781354054
Mean error from LASSO: 0.46392896781354054
X subset = 11 , i = 10 , j = 4
Mean error from standard least squares: 0.4556048834628191
Mean error from LASSO: 0.42480577136514985
X subset = 11 , i = 10 , j = 5
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Mean error from LASSO: 0.4109322974472808
X subset = 11 , i = 10 , j = 6
Mean error from standard least squares: 0.41870144284128746
Mean error from LASSO: 0.41897891231964485
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Mean error from standard least squares: 0.43174250832408434
Mean error from LASSO: 0.4125971143174251
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Mean error from LASSO: 0.4339622641509434
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Mean Error for pure least squares, X subset 1 = [0.49516699]
Mean Error for LASSO, X subset 1 = [0.52573656]
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Mean Error for pure least squares, X subset 8 = [0.43358137]
Mean Error for LASSO, X subset 8 = [0.43358137]
Mean Error for pure least squares, X subset 9 = [0.49982595]
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Mean Error for pure least squares, X subset 10 = [0.4582585]
Mean Error for LASSO, X subset 10 = [0.44681162]
Mean Error for pure least squares, X subset 11 = [0.46232469]
Mean Error for LASSO, X subset 11 = [0.4515841]

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[ ]: