PART 1

Dataset -100-10:

Minimum MSE found at lamda 8 : 4.15967850948

Dataset -100-100:

Minimum MSE found at lamda 22 : 5.07829980059

Dataset -1000-100:

Minimum MSE found at lamda 27 : 4.31557063032

Dataset crime:

Minimum MSE found at lamda 75 : 0.389023387713

Dataset wine:

Minimum MSE found at lamda 2 : 0.625308842305

PART 2 is plotted and saved

PART 3

Dataset test-100-10: 4.18010155781

Found at (lambda, alpha, beta) : 4.68753172878 1.20197823347 0.256420287481

Dataset test-100-100: 7.35246238289

Found at (lambda, alpha, beta) : 2.31997709886 1.12347258704 0.484260205668

Dataset test-1000-100: 4.33835151521

Found at (lambda, alpha, beta) : 10.3538132571 2.73595738124 0.264246351881

Dataset crime: 0.391102301805

Found at (lambda, alpha, beta) : 130.950301647 425.645089372 3.25043229391

Dataset wine: 0.626746102226

Found at (lambda, alpha, beta) : 3.82888436422 6.16377595148 1.60980989896

PART 4

Dataset f3:

MSE using unregularized for dimension 1 : [ 39389142.58553824]

MSE using bayesian for dimension 1 : [ 39376476.01658703]

Log evidence : [-3048.48927291]

MSE using unregularized for dimension 2 : [ 39495762.45900573]

MSE using bayesian for dimension 2 : [ 39527145.40098491]

Log evidence : [-3053.74495727]

MSE using unregularized for dimension 3 : [ 148429.38836498]

MSE using bayesian for dimension 3 : [ 96551.64124313]

Log evidence : [-2718.82717777]

MSE using unregularized for dimension 4 : [ 179627.46131853]

MSE using bayesian for dimension 4 : [ 154871.33623913]

Log evidence : [-2720.61035654]

MSE using unregularized for dimension 5 : [ 186263.56079652]

MSE using bayesian for dimension 5 : [ 157992.08345906]

Log evidence : [-2730.50445431]

MSE using unregularized for dimension 6 : [ 211370.60739408]

MSE using bayesian for dimension 6 : [ 165209.1550159]

Log evidence : [-2742.37486665]

MSE using unregularized for dimension 7 : [ 211030.0522378]

MSE using bayesian for dimension 7 : [ 182885.31418948]

Log evidence : [-2751.00423345]

MSE using unregularized for dimension 8 : [ 219229.87948306]

MSE using bayesian for dimension 8 : [ 194652.63635622]

Log evidence : [-2763.08006626]

MSE using unregularized for dimension 9 : [ 226345.8813248]

MSE using bayesian for dimension 9 : [ 187100.26305784]

Log evidence : [-2777.31247308]

MSE using unregularized for dimension 10 : [ 270774.80685976]

MSE using bayesian for dimension 10 : [ 231487.19001278]

Log evidence : [-2797.39982283]

Dataset f5:

MSE using unregularized for dimension 1 : [ 3.41642661e+11]

MSE using bayesian for dimension 1 : [ 3.41402513e+11]

Log evidence : [-4393.81380472]

MSE using unregularized for dimension 2 : [ 3.41195638e+11]

MSE using bayesian for dimension 2 : [ 3.41325173e+11]

Log evidence : [-4397.83433491]

MSE using unregularized for dimension 3 : [ 1.74656021e+10]

MSE using bayesian for dimension 3 : [ 1.75020359e+10]

Log evidence : [-3960.02371115]

MSE using unregularized for dimension 4 : [ 1.74356551e+10]

MSE using bayesian for dimension 4 : [ 1.74788646e+10]

Log evidence : [-3966.05971328]

MSE using unregularized for dimension 5 : [ 61375.34507168]

MSE using bayesian for dimension 5 : [ 54311.87565423]

Log evidence : [-2733.78974097]

MSE using unregularized for dimension 6 : [ 79043.05430737]

MSE using bayesian for dimension 6 : [ 69759.82103538]

Log evidence : [-2743.76707249]

MSE using unregularized for dimension 7 : [ 106031.55298701]

MSE using bayesian for dimension 7 : [ 90772.60657678]

Log evidence : [-2756.48575468]

MSE using unregularized for dimension 8 : [ 104840.41232082]

MSE using bayesian for dimension 8 : [ 90694.61797138]

Log evidence : [-2771.87388639]

MSE using unregularized for dimension 9 : [ 110065.56947425]

MSE using bayesian for dimension 9 : [ 104392.72842088]

Log evidence : [-2782.47704804]

MSE using unregularized for dimension 10 : [ 108832.55018762]

MSE using bayesian for dimension 10 : [ 100635.16263634]

Log evidence : [-2799.97058991]