

# Problem 1

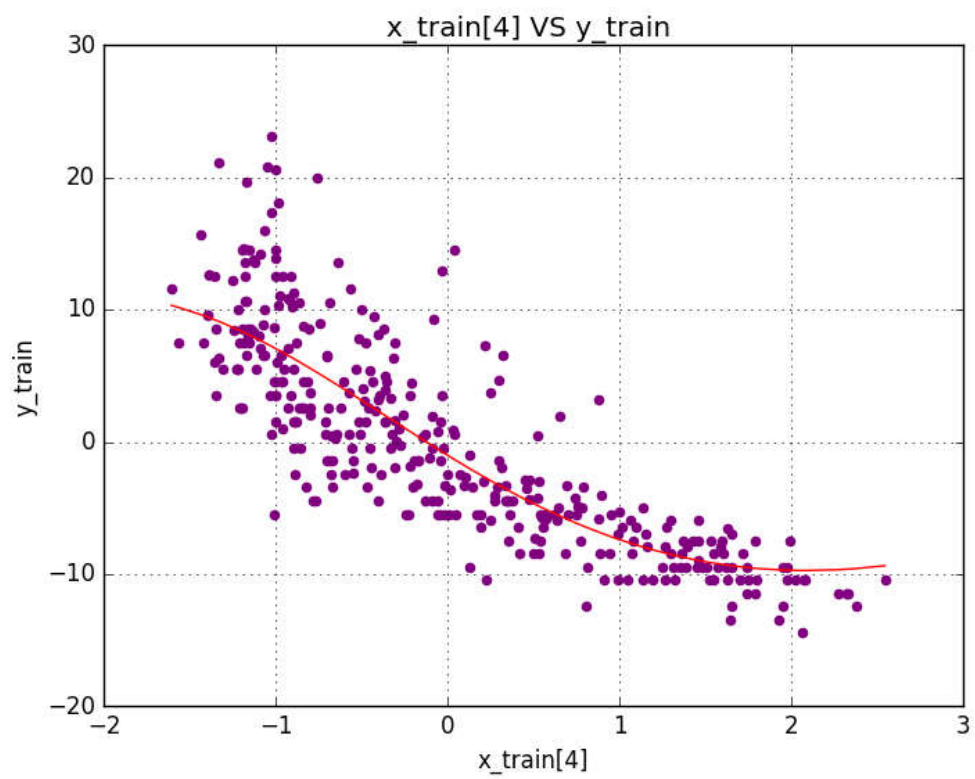
b)

RMSE
1.96627609591
1.93313534319
1.92342020368
1.92219759607
1.92476911509
1.92921254653
1.93463406769
1.94058309861
1.94681993595
1.95321250125
1.92016325832
1.9048765174
1.90808032792
1.91590167624
1.92480407564
1.93370139922
1.94225376685
1.95038003768
1.95809306541
1.96543803863
1.89764875193
1.90251912976
1.91764768944
1.93251433041
1.94569947287
1.957234791
1.9674032573
1.97649174935
1.98474077166
1.99234121105
1.89050711498
1.91498100877
1.93884877947
1.95793624544
1.97321582488
1.98576420798

	1. 996375139	
	2. 00560321943	
	2. 01383544465	
	2. 02134479974	
	1. 89584850116	
	1. 93558590067	
	1. 96459732112	
	1. 9855019944	
	2. 00131427327	
	2. 01387845082	
	2. 02431037883	
	2. 03330677928	
	2. 0413174914	
	2. 04864155177	
	1. 90960321608	
	1. 95954883215	
	1. 99080358539	
	2. 01191545332	
	2. 02737028478	
	2. 03946516631	
	2. 04946337921	
	2. 05810489069	
	2. 06584526946	
	2. 07297605879	
	+-----+	

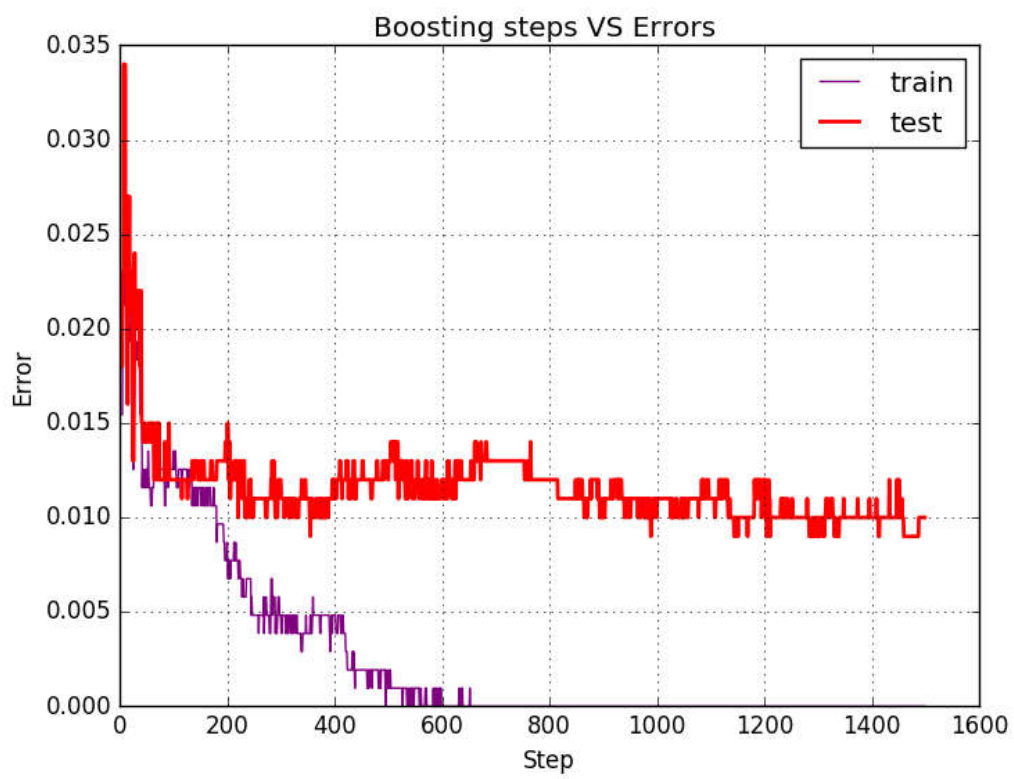
c) The best value comes from 31<sup>st</sup> iteration, that's  $b = 11$ ,  $\sigma=0.1$ ,  $RMSE = 1.89050711498$ . It's less than that in homework 1. However, the drawback of this approach is that we should assume that the data is Gaussian distributed, and computing the kernel is a bit time-consuming.

d)

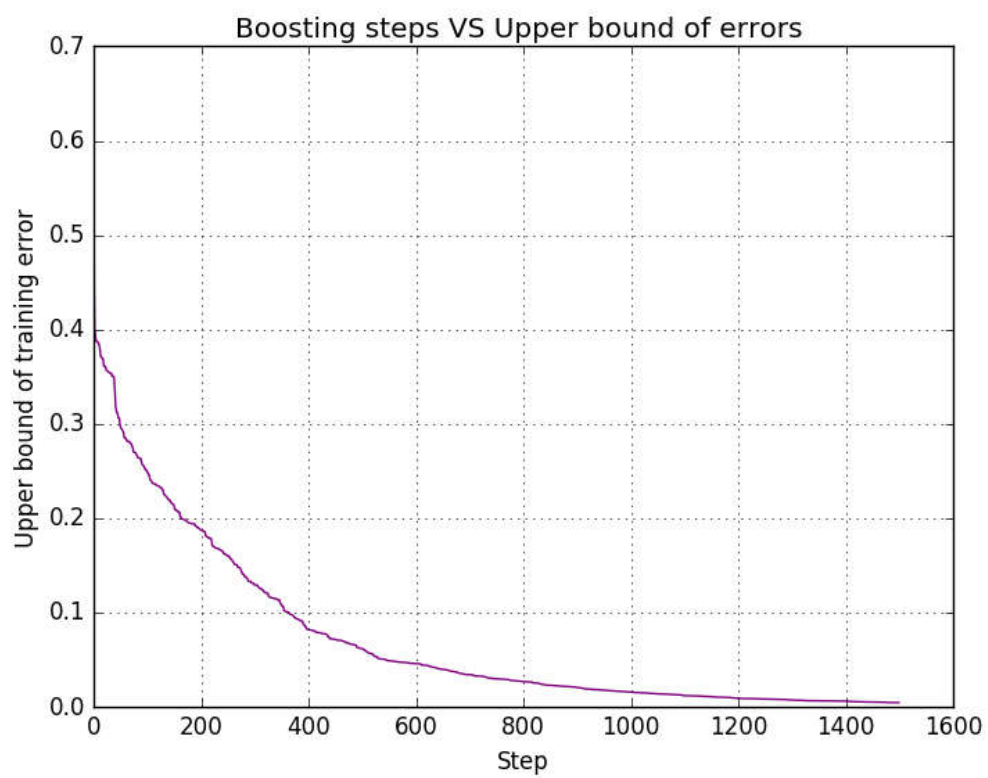


## Problem 2

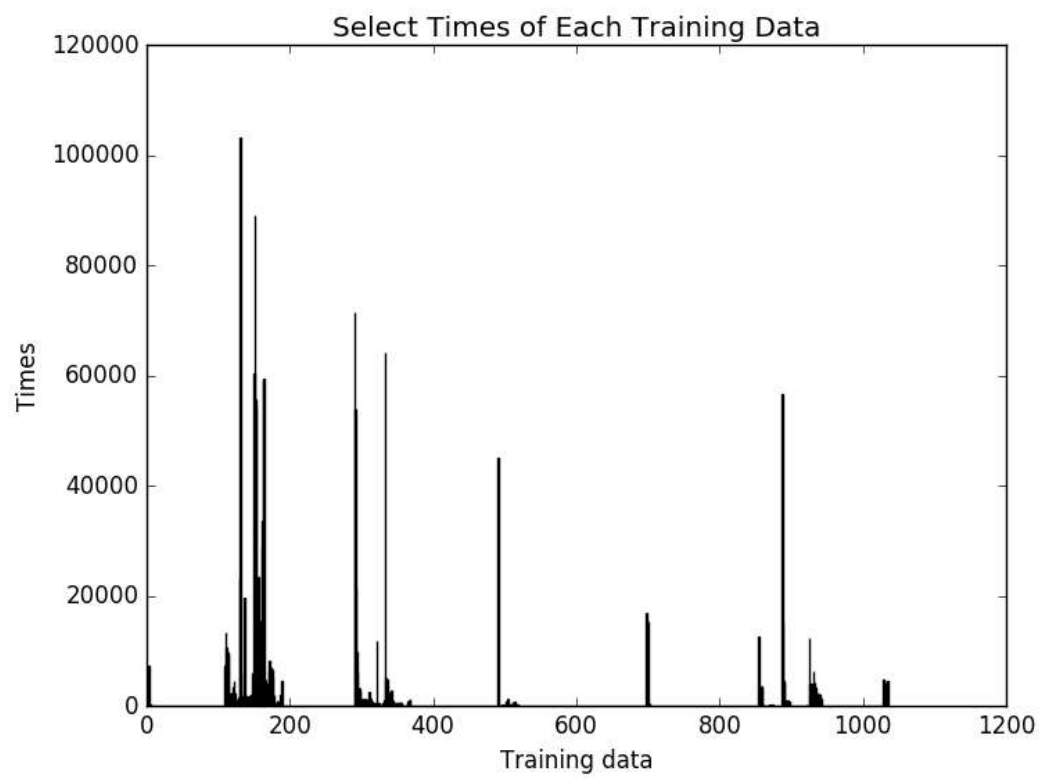
a)



b)



c)



d)

