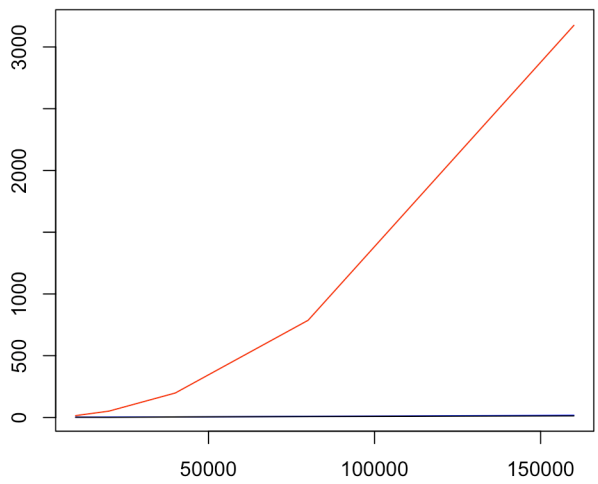
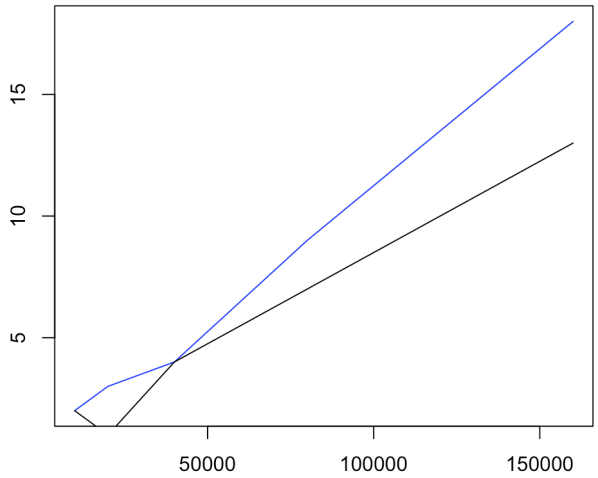
1. Testing Insertion Sort vs. Merge Sort vs.Tim Sort (in ms)

Dataset sizes	Insertion Sort	Merge Sort	Tim Sort
10000	15	2	2
20000	51	3	1
40000	198	4	4
80000	787	9	7
160000	3175	18	13

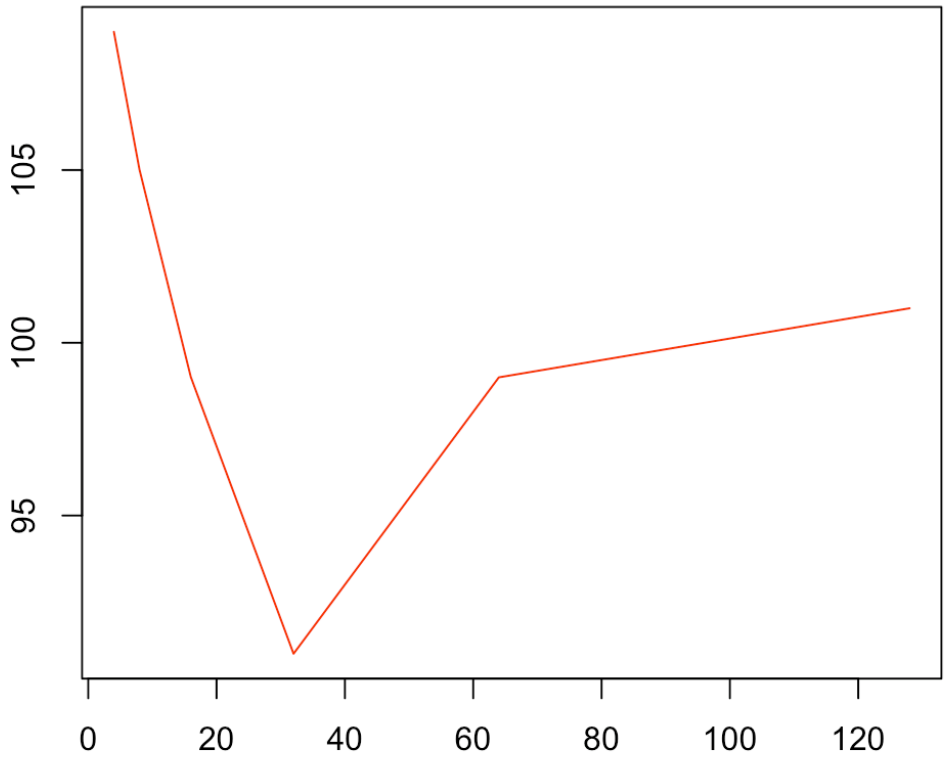




As showing in the two graphs above, the red line represents the Insertion Sort, blue line represents the Merge Sort and black line is the Tim Sort. Due to Merge Sort and Tim Sort are too close when plot them in a large scale, I show these two separately I another graph. Graphs show us pretty clearly that the complexity of Insertion Sort is much larger than the rest of two. This in another way showed as longer time to sort the same size data. Longer time in the graph represents the higher position. It means the read curve is located higher then the other two. Which is corresponding with the longer time then the higher complexity.

2. Testing Tim Sort Cutoff Values

Run Size	Time
4	109
8	105
16	99
32	91
64	99
128	101



As showed in both chart and the graph, 32 gave the best performance.