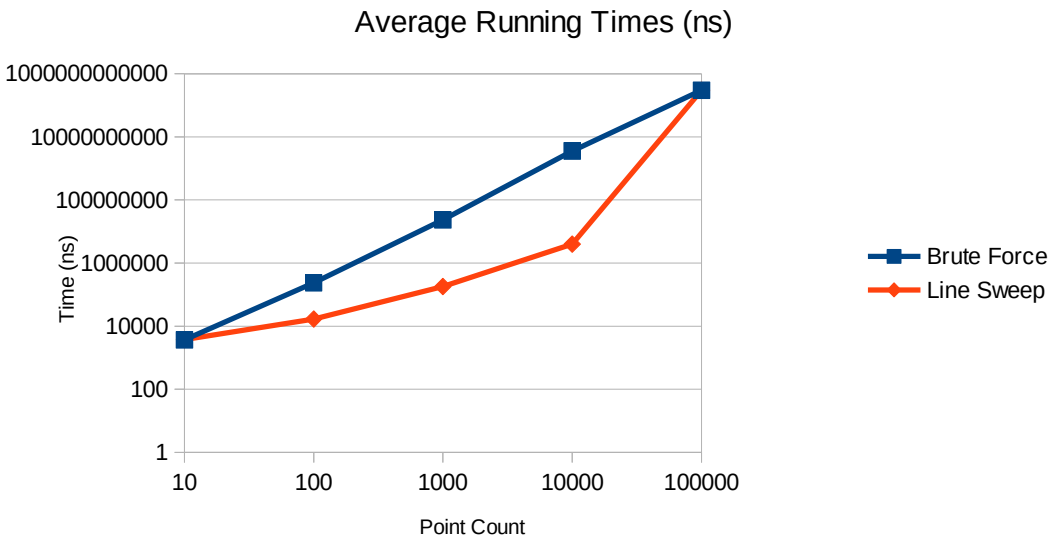
Sheet1

Point Count	Brute Force	Line Sweep	
10	3697	3751	
100	237203	16857	
1000	23395537	179232	
10000	3573792914	4014712	
100000	300000000000	300000000000	(both timed out)



The Brute Force and Line Sweep algorithms for line segment intersection both have advantages and disadvantages. First, the brute force has very little start-up cost where as the line sweep algorithm must convert each line segment into two events to initialize the algorithm. With a small number of line segments, this was not an issue. However, once we hit the 100,000 segment test, the massive speed increase seen in the previous tests seemed to disappear and both algorithms timed out. Also, the limitation of the line sweep algorithm requiring that there were no colinear lines, no vertical lines, and no three line segments intersect in a common point; the last of which is the most time consuming to test while creating the random data. In fact, for the random sample data I assumed this would not happen. However, I cannot guarantee that so the output was ignored for random testing. The upside was that the line sweep algorithm did, on average, much better than the brute force algorithm for small to moderate sample sizes.