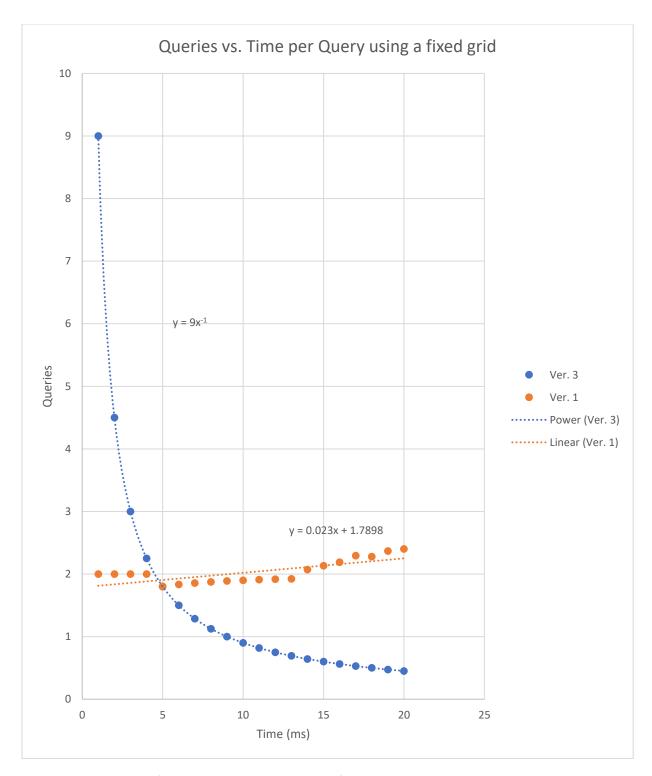


Number of Queries ver. 3 must at least do to make the preprocessing worth it over ver. 1. All queries were generated randomly and they were based upon the size of the grid. Before gathering data, there was a warmup in which both versions were run 100 times.



The average amount of time each query as amount of queries go up. Ver. 3 gets a similar average time per query around the 5th query, which is around the time in which ver. 3's preprocessing time becomes "worth it" over ver. 1. This was done with a fixed array of 1000000 squares (1000X1000). There seems to be a constant linear relationship between Ver. 1's queries in that their average is always around 2 ms, and there seems to be an inverse relationship between Ver. 3's queries and the average time of the queries