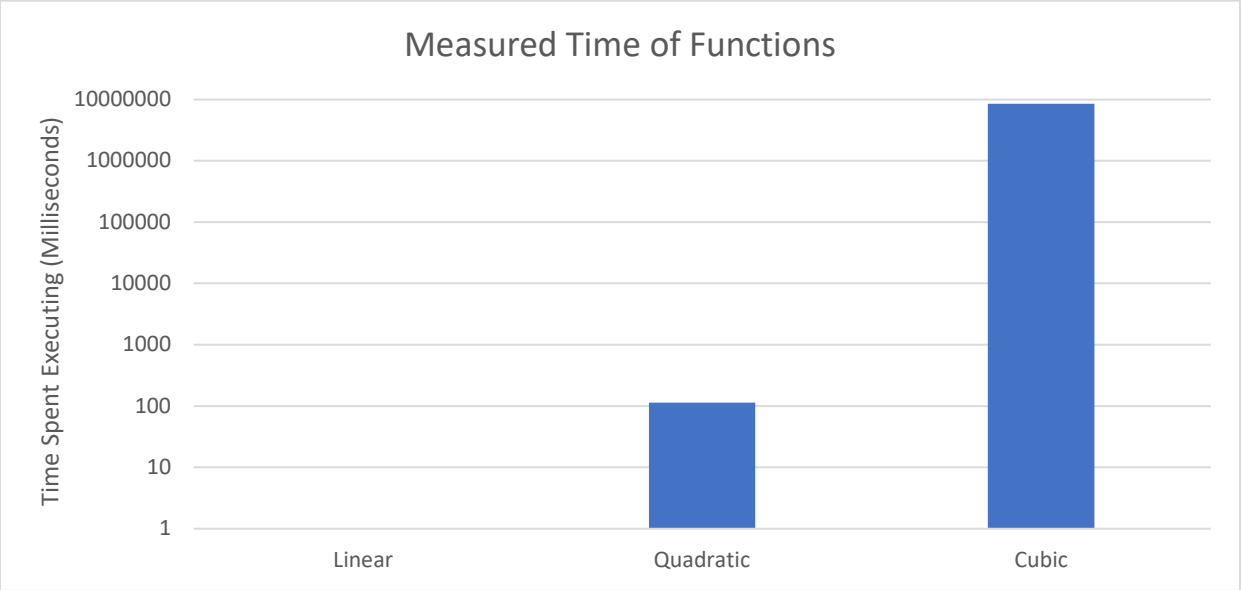
Question 3 – Analyzation of Polynomial Functions– Alexander Sun

Introduction of Algorithms:

The three function just do a sum calculation within them. There is one linear, one quadratic, and one cubic function all done with nested for loops (see code for details). This was run on n = 100,000.

Graphs & Data:



Observations & Reflection:

Linear took 1 millisecond, quadratic took 113 milliseconds, and cubic took 8465082ms. Likely linear took less than 1 ms so the scaling from linear to quadratic does not look like 100,000 times. However, from quadratic to cubic, it seemed like it scaled by a factor of n (or 100,000 in this case). 113 * 100,000 = 11,300,000ms. 8,465,082 is very close to this value, so the function visibly scaled correctly.