Cover Report

MATC15 - Project - Final Submission

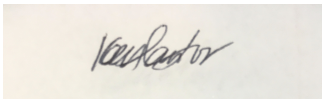### Andrew D'Amario, Kevin Santos, Dawson Brown

March 2021

Kevin Santos' (wrote sections: 1, 1.1, 1.2, 1.3, 1.4, 1.5) role was to research the already existing finds on the subject and further apply the theory to put us in a better place to be able find solutions to the sum and investigate ways to make the search more efficient. Andrew D'Amario's (wrote sections: 1, 4, 5, 6.2) role was to focus on the computational analysis in the search to find solutions to the sum by building an algorithm to find the sum, computationally analyzing patterns of powers mod N so as to reduce the complexity of finding the sum, conjecture on his findings, and delve into the theory to back up and support his findings. Dawson Brown's (wrote sections: 2, 3, 6.1, 6.2, 6.3) role was to optimize the computation behind finding solutions to the sum, analyze the complexity of the algorithm, deeper delve into the theory to find limits for the terms and more efficient ways to eliminate impossible solutions.

Kevin Santos: **Dawson Brown:**   **Andrew D'Amario:**

Thursday, April 8th, 2021