Read Me for Code

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1 Read Me

This repository contains code and data used to elucidate potential next steps to prove Conjecture 1.3 ($\Delta_d^{(3,-)}(n) \geq 1$).

This is the code referred to in Section 7 and Acknowledgements of the Inagaki and Tamura 2022 paper.

1.1 How to Use the C++ code (.cc file) in Linux Terminal

Before you do anything, make sure your pwd is the same directory as is the coefficients_d3_oneDash.cc

First, compile the C++ file. Type without quotes :
"g++ ./coefficients_d3_oneDash.cc o coefficients_d2."

Then Type without quotes:
"./coefficients_d2 NUM_TERMS d output_file <d >"
where d is a positive integer parameter and NUM_TERMS is the positive integer number of terms you want to compute $Q_{d-3}^{(1,-)}(n)$ and $q_d^{(1)}(n)$ and $\Delta_d^{(3,-)}(n)$.

To stay organized, let <d >be the value of d you inputted earlier in the line.

2 The output_file

In this repository, given a positive integer d, output_file<d >has the values of $Q_{d-3}^{(1,-)}(n)$, $q_d^{(1)}(n)$, and $\Delta_d^{(3,-)}(n)$ for n from 1 to 100,000 inclusive. Open this through your text editor.

Note from the output_file 's for d in between 1 and 9, it seems as if $\Delta_d^{(3,-)}(n) < 0$ and the

$$\Delta_d^{(3,-)}(n)$$

decreases rapidly as n gets large.

Note that for d at least 10, it seems as if $\Delta_d^{(3,-)}(n) \geq 0$ and the $\Delta_d^{(3,-)}(n)$ increases as n gets large.