

MTH 3270 Final Project Weekly Report

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What did you try?

This week we did not attempt anything new from what we have already come to learn.

- Step 1: We first started off by breaking the ice in using the demo question, first leaving out parenthesis. We observed that the number of integers determines the number of equations and the answers to said question. By calculating all the possible ways of writing n amounts of digits with either addition or multiplication.
- Step 2: In the second week of the project we observed a possible way to the lower the number of ones. If n was an even number divide that number by 2, if n was an odd number subtract 1 to make it even and then divide by 2. Doing so till all the numbers would be broken down to ones.
- Step 3: After we found this pattern, Carlos was able to generate a code that demonstrate our findings. Explaining that breaking down the number n was similar to factoring but with extra steps. And was able to use a recursive function to do so.
- Step 4: After doing the code, in week 4 we were attempting to disapprove our original findings in generating the least number of ones to be more efficient with a new method. Which was using table of factor families using it almost like a key. As well as generating 4 steps in order to achieve the lowest number of ones using the number 10. In the end we saw that this method was less efficient as it could be too long of a process to do so for larger n values.
- Step 5: With the code that was produced by Carlos, we were able to generate a scatter plot. The scatter plot show how greater n values the graph curved. Still surprising to see at lower than 10 the scatter plot was more linear.

What did you observe?

What we saw week by week is improvements along with the project. How one step led to another and with guidance able to come up with different findings each week.

What are your next steps?

For this week our group will be gathering all of your knowledge gained in this project to continue to work on the beamer template and prepare for the final presentation.