

Math 1P40 Winter 2018
Assignment #1
Due Friday January 31 by 4pm in the Drop Box

Note: Your assignment will consist of a written document and a USB with a **working program** which you have place in a sealed 8.5x11 envelope. The Written Document and Envelope must both show the course name and number, your name, student number, lab section number, and assignment number. Your USB must show your name, ID and assignment number. *If this format is not respected, you may loose up to 5%.* You must also sign and attach the form of statement of non-plagiarism (found on Sakai) to your written document.

Assignment #1

1. Come up with a clear and interesting conjecture concerning primes or the "Hailstone" Sequence.
2. Write a program that will allow the user (you!) to gather data regarding the conjecture posed in (1).
3. In your written document, describe clearly how your program works, provide a sample (handwritten) of the input and output from your program and discuss the conclusions you have made from your data.

Your Program

1. Program must be written in visual basic.net
2. The program must run when the marker clicks on the .sln on your USB.
3. The interface must be attractive and user friendly.
4. It must be clear AT ALL TIMES what the user is to do and what type of information the program is providing.

Written Document (hand-written or typed):

Your written document will consist of four parts under the following headings:

1. CONJECTURE (the question you're going to investigate)
Write a clear statement. If you were inspired from reading in a book or on Internet, give the reference — up to few lines
2. PROGRAM DESCRIPTION (what your program is supposed to do) — 1 small paragraph
3. SAMPLE DATA (possibly handwritten) — up to two pages
4. CONCLUSIONS (Discussion of what you learned about the answer to your question from the data you obtained.) — up to one page

Student's ID# _____

Grade = $\frac{\quad}{100}$

Evaluation of Assignment #1

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|----|---|--------------------|
| 1) | The program runs and gives output | $\frac{\quad}{20}$ |
| 2) | The program's interface is very easy to understand and use. | $\frac{\quad}{10}$ |
| 3) | The interface is very attractive. | $\frac{\quad}{10}$ |
| 4) | The student's conjecture shows exceptional originality or mathematical depth. | $\frac{\quad}{15}$ |
| 5) | The program has been well designed to gather data directly related to the conjecture. | $\frac{\quad}{10}$ |
| 6) | The student's program shows one <u>or</u> more of the following qualities
i) exceptional originality
ii) exceptional programming skill
iii) exceptional interface design
iv) exceptional use of mathematics | $\frac{\quad}{15}$ |
| 7) | There is a written document that contains a clearly stated conjecture, input and output from the program and a conclusion that clearly explains how the data relates to the question. | $\frac{\quad}{20}$ |

Any comments by the marker: