Name _____

Class _____

Problem 1 – Sequences and scatter plots

For each sequence, write the differences between the consecutive terms and give a description of the scatter plot.

- Sequence B

- Sequence D

- Sequence F

- Sequence H

- Make a conjecture about the scatter plot of a sequence and the differences between consecutive terms.

Problem 2 – Explicit formulas and sums

- Substitute 7.5 for u_1 and 1.25 for d in $u_n = u_1 + (n - 1)d$ to write an explicit formula for the sequence {7.5, 8.75, 10, 11.25, 12.5, 13.75, …}.

- Simplify the right side of the equation.

- What is the sum of the first 30 terms?

Problem 3 – Practice finding the sum of a series

Find the sum of the first 80 terms of the sequence below. Use both the *Lists & Spreadsheet* and *Calculator* applications.

62, 67, 72, 77, 82…

- What is the sum?

Extension

The sum of the first n terms of an arithmetic series can be found by multiplying the number of terms n by the average of the first and last terms.

- Use the *Scratchpad* to show that this holds true for the sums found in Problems 2 and 3.