Short Report

These assignments nicely demonstrate some of the restrictions of computers, and how we need to be aware of that when making algorithms. The first problem shows how adding super small numbers can lead to problems because of how the numbers are stored in the bits. The extra credit problem displays how an incorrect assumption of how precise the program needs to be can lead us to conclude incorrect results about math, like a divergent series falsely converging to a number because the addition is so small it can no longer change the sum.

I guessed that the $1/n$ would underflow and become 0, because I thought that would happen sooner than the precision being too low to add the numbers together, and far before the sum overflowed. Looks like I was right on the last bit, but not about the precision.

A short discussion of what these assignments demonstrate on the limitations of a computer.