Reflective Writing for Credit Card Lab

The Credit Card Lab examines different approaches to paying credit card debt using logarithms. The lab poses $2,000 of debt at 14.5% APR, compounding monthly at a rate of 1.208%. The lab provided us with an initial formula where P is the monthly payment required to pay off a debt of amount D in M months, and i is the monthly interest rate: $P = (D * i)/(1 - (1 + i)^{-m})$. I then refactored this formula to calculate how many months it would take for payments of $25, $50, and $75 a month to pay off the debt. This was the primary exploration of the lab. The final formula is: $M = -(log((-(D * i)/P) + 1)/log(1 + i)$.

This project demonstrates the real-world application of math, specifically in the realm of personal finance. This is both important and beneficial because understanding the long term implications of credit card debt -and paying it off quickly- is a lesson best learned in a classroom scenario rather than through experience. Another beneficial application of this type of analysis could be in the difference between owning a home and renting. Mortgage interest rates, property taxes, and utilities could be compared to cost of rent and utilities, and through a similar process one could identify that long-term owning is the better financial decision. This primarily is due to the lack of ownership in a home; in other words, like making the minimum payments on a credit card, renting will cost significantly more in the long run.

I have some related experience where, while not a financial advisor, my job was answering questions for both clients and financial advisors during the sale and administration of retirement products. I believe it's critical that a financial advisor be able to explain these kinds of concepts competently, but unfortunately in many states (including Utah) financial products and insurance operate under "buyer beware" laws. That context just further reinforces why this

project is so important for us to go through, since in Utah we can't always rely upon financial advisors to disclose everything or act in our best interest. Having an understanding, even a basic one, of the math behind a finance or insurance product means that I can be better prepared and ask detailed questions of a financial advisor. This project has further cemented that belief for me.

The best plan for paying off a credit card is as fast as possible. Making minimum payments will result in thousands of more dollars and takes years, maybe decades to pay off a debt. The minimum payment will typically only cover the interest, so making as large of a payment every month is critical in reducing the principal amount that the interest is being calculated from. This of course should be within one's financial capabilities, so as large of a payment as one can afford each month. The average consumer should learn two things from this lab: the importance of paying debt quickly, and understanding the lie that is a debt's minimum payment.