

Name: _____

Section: _____

Homework 2

50 points

Due: 15 Oct 08

INSTRUCTIONS: This is a graded assignment. Each person must submit their own solution. Document your assistance in accordance with (IAW) the Documentation of Written Work (DOWW).

A big concern for most Americans in a bad economy is the increased dependence on their lines of credit. My USAA credit card has an annual interest rate of 8.9% compounded monthly. My current budget allows for me to pay \$250 each month. Assuming that my budget and rate do not change, answer the following questions.

1. I currently owe \$5,167.23 on my credit card.
 - (a) Develop a discrete dynamical system to model this scenario.
 - (b) How long will it take me to pay off my credit card? Explain your solution.
 - (c) Create an analytic solution to this DDS.
 - (d) Use your analytic solution to verify your answer to part b.
 - (e) Assuming the credit card company knows my budget can only handle \$250 each month. How should they set my credit limit to be in order to guarantee I repay my debt?
2. This month, I took a trip to Vancouver and charged \$1000 to my account.
 - (a) Find the new analytic solution to this recursion equation.
 - (b) Find the amount of time it will take to pay off my card with this new purchase.
3. Using the new balance from question 2, and assuming I have a Netflix membership that bills \$16.99 for 3 videos a month to this card. How long will it take me to pay off my card?