

## **GYC 202**

**Paula DeAnda-Shah**

### **Math 090**

#### **Topic: Simple interest calculation on a payday loan**

This topic is introduced in the last chapter in the course: Percents. This Fall, I'm scheduled to teach all Mastery-Based learning sections of Math 090, which take place in a computer lab as students progress at their own pace. So I am not sure if I will be able to use this lesson in the Fall, but hopefully at latest in the Spring.

#### **Course Learning outcomes:**

- A. Perform addition, subtraction, multiplication, and division on rational numbers.
- B. Perform the basic operations in the correct order.
- C. Apply the concepts of arithmetic correctly in problem solving.
- D. Solve first degree equations in one variable.

#### **Assignment Learning outcomes:**

- Students will be able to make a real world connection to a course concept.
- Students will be able to compute simple interest on a loan or investment.
- Students will think critically about who is targeted by Payday Loan companies and what the real cost is of using such loans.

#### **Methods of assessment:**

The goal of this lesson would be to provide students with an example of how they can use mathematics to make financially smarter decisions. In this particular lesson it would be to see the ridiculously high interest rates that payday loan companies charge. In the example provided, students will calculate the APR on a \$1000.00 loan due back in 2 weeks and with a \$100.00 fee. It turns out the APR is approximately 372%! Additionally, they will likely better understand the concept of "The rich get richer and the poor get poorer."

The activity will be assigned for students to complete at home and graded as a homework assignment. Once turning it in, we would discuss their findings in class. From there, on a quiz and/or exam I would give students a different payday loan example that they can work through.

## Lesson

### Background

In class we have discussed two types of interest: Simple Interest and Compound Interest.

Simple Interest:  $A = P(1 + RT)$

Compound Interest:  $A = P(1+R)^t$ ,

where P is the principle, R is the rate (written as a decimal), t is time, and A is the amount you at the end of the investment or loan period.

Consider the differences we discussed between a simple interest investment or loan versus a compound interest or loan.

### Your Task

You have probably seen MANY payday loan locations around town, such as “Payday Loan”, “Check ‘n Go”, “AmeriCash”, etc... The basic premise of these places is to give you a quick loan oftentimes for a short but set amount of time.

Your task is to calculate what the annual interest rate would be on the following average payday loan:

You borrow: \$1,000.00

You have 2 weeks to pay it back.

The company charges you a flat rate of \$100.00.

Part 1: Identify what type of interest this loan describes: Simple or Compound Interest. State how you know.

Part 2: Now that you have identified the type of interest it is, identify the following:

P =

A =

R =

T =

(Hint: In the equation you set up, you will be solving for one of the variables above, so you will not have a value to plug in for that variable.)

Part 3: Use the Properties of equality to solve the equation in order to determine what the APR would be on the described payday loan.

Part 4: Look up one of the credit cards you own (or one of a family member if you don't have one) and identify what the APR is for that credit card. State what credit card it is and what the APR is.

Part 5: Compare the APR of your credit card with the APR for the payday loan. How does it compare? Which one is higher and by how much?

Part 6: Answer and reflect on the following questions:

From doing these calculations, what are your thoughts on payday loans and why? Would you ever use it? Why or why not?

Who do you believe they target?

Do you believe having this information would change people's mind about payday loans (either those that use them or those that don't)? and why?

Part 7: Reflect on the commonly used phrase, "The rich get richer and the poor get poorer." What does this mean to you? How might we understand this quote in light of what you learned about payday loans?