Programming Exercise 4.1

A Simple Mortgage Calculator, v.1.0

Purpose. The purpose of this lab is for you to practice writing a program that performs a calculation using a math library function, and outputs nicely formatted results.

Requirements. Write a program to determine the monthly payment on borrowed amount of money to be paid back over 30 years. Name the file **MortgageCalculator1.java**. Here are the program specifications:

6. Choose a dollar amount to be borrowed, as a whole number.
7. Specify an *annual percent* interest rate, as a floating-point number.
8. Calculate the monthly payment in dollars, as a floating-point number, using the formula shown below.
9. Include in the output an echo of the input amount borrowed, the annual percent interest rate (*without* formatting) and the payback period (in years).
10. Include in the output the calculated monthly payment, formatted to show two decimal places (like this: `1000.00`)

Here's how to calculate a mortgage payment:

$$(p * (1 + r)^n * r) / ((1 + r)^n - 1)$$

- **p** is the mortgage amount as entered by the user
- **r** is the *monthly decimal* interest rate
- **n** is the number of monthly payments in the payback period

Program I/O. Input: 3 programmer-specified inputs (amount borrowed, interest rate, and 30 year payback period) Output: Echoes of each input and the calculated monthly payment.

Example. For example:

```
Amount borrowed (programmer input) = $270000
Annual interest rate (programmer input)  = 5.125%
Payback period (programmer input)  = 30 Years
Monthly payment (calculated output)  = $1470.11
```