Programming Exercise 5.1

A Simple Mortgage Calculator, v.2.0

Purpose. The purpose of this lab is for you to practice writing a program that uses console keyboard input, 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 **`MortgageCalculator2.java`**. It's a modification of Exercise 4.1's `MortgageCalculator1.java`, replacing programmer-defined inputs with console inputs. Here are the program specifications:

6. Prompt the user to enter the dollar amount borrowed as a whole number (for example, for $500,000, enter `500000`).
7. Prompt the user to enter the *annual percent* interest rate, with any number of decimal digits (for example, for 5.85% annual interest rate, enter `5.85`. For 6%, enter `6`).
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: 2 console keyboard inputs (amount borrowed and interest rate) and one programmer-specified (30 year payback period) Output: Echoes of each input and the calculated monthly payment.

Example. For example, with user input in blue:

```
What's the amount borrowed? 270000
What's the annual interest rate? 5.125

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