CSCI-14 assignment 2, due 9/13/22

The formula for determining the monthly payment (p) for a mortgage is:

$$p = \frac{m * (1 + \frac{r}{12})^{12n} * \frac{r}{12}}{(1 + \frac{r}{12})^{12n} - 1}$$

where m is the amount of the loan, r is the annual interest rate, and n is the number of years in the mortgage. For example, a 30-year loan for $105,000 at 11.5% (i.e., r = .115) results in a monthly payment of $1039.81 rounded to the nearest cent. You may use these names as variable names in your program. You may want to use other variables, too.

Write a program that obtains (from the user) the amount, interest rate and number of years of the loan, then calculates and prints out the monthly payment.

An example run:

```
Enter loan amount : 105000.00
Enter annual interest rate (e.g., 0.08 for 8%) : 0.115
Enter number of years : 30

The monthly payment is $1039.81
```

Remember, DO NOT EDIT YOUR OUTPUT! Just copy and paste it to Notepad.

A function you will need is `pow( x, p )`, which returns x to the p^{th} power. To get access to it, you need to put the line `#include <cmath>` at the top of your program. The values `x` and `p` in the function call must both be of type `double`, and the returned value is also of type `double`.

An example call:

```
double x, y;
(statements that set x to some value...)
y = 1.0 + pow( x, 1.0/3.0 );
```

This places one more than the cube root of x into y.

Round the results to 2 decimal places following the model in kilos.cpp. By adding the line #include <iomanip> to your program, you can use the `showpoint`, `fixed` and `setprecision` output manipulators. Test your program with the values given above, and by varying the values and verifying the output is reasonable. Include tests with a higher and lower loan amount, interest rate, and term, as well as tests with two or all three of the input values changed.