

**You need to use functions for this assignment.**

1. Write a program to calculate the monthly mortgage payment when buying a house. You should have a function that takes 3 parameters, P, r, and n. Calculate the monthly payment and return it to the caller. The equation is:

$$M = P \frac{r(1 + r)^n}{(1 + r)^n - 1}$$

and each variable represents the following:

- P is the principal, the money you borrowed from the bank,
- r is your monthly interest rate, calculated by dividing your annual interest rate by 12,
- n is your number of payments (the number of months you will be paying the loan)

You need to get user input for amount of the money she/he borrowed from the bank, annual interest rate, and number of years of the loan. Make necessary calculation before calling and passing the values to the function. Display all 4 values, principal, annual interest rate, loan period in years, and the monthly payment to the screen. Use proper format for each value when display them.

2. Create a text file and name it **planets.txt** that includes all planets (Mercury, Venus, Mars, Earth, Jupiter, Neptune, Saturn, Uranus). Write a program that reads in the file and populates all planets into a list, sorts the list, and display the first 5 planets in the list.