The Five Problems

General Information and Instructions:

1. Many of the following programming problems below are perhaps known to you (taken from our lecture slides, and lecture materials-PDFs).
2. You are **expected** and **required** to answer them ("again" to those who have solved them before) to practice your logic-formulation and programming skill.
3. In solving this activity, **ideally**, you are to write down your solutions using paper and pen approach, so that you will get more familiarize on C programming concepts and be conscious whether you are applying the concepts correct or not. Once done, then encode your codes using Dev-CPP IDE and do necessary changes if there are any mistakes. **Test** your error-free code several times under different values to see if your code is 100% correct or not.
4. You are free to **email me** of your solutions **to solicit feedback from me** and at my end, I will try the best to send you immediate feedback. If you will send me an email kindly follow the format below:
   Problem #1: Place here the programming problem question
   Solution: Place your codes

   Problem#2: Place here the programming problem question
   Solution: Place your codes
   :
   :
   If you have established confidence in your solution, you do not need to submit your solution to me. However, you can still email me and seek out for any improvements in your code, if ever ☺Feel free to include in your email any clarifications you wish to make ☺ **Do please read each problem very well**.
5. I trust that you will work on this activity as part of your programming practice. You need Practice Practice Practice!
6. The problems listed DO NOT require use of LOOPS. [Don't be anxious in using LOOPS. You will be exposed with several problems dealing with LOOPs after Departmental Exam#1 ☺. Be patient ☺ We'll get there ☺]

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1. Harry Potter, Quasimodo and Master Yoda decided to go on a holiday in Hong Kong. Because they are such good friends, they decided to get one room at a hotel, sharing their expenses during the entire trip. Aside from lodging expenses, they will also be sharing food (restaurant and grocery bills) and transportation expenses. All their shopping (clothes, leisure items, etc) will also be shared. To help them compute for their costs, they need a calculator. Your task is to write a program, which will act as a **simple calculator**. It performs 4 operations: addition, subtraction, multiplication, and division. The calculator is simple because it is able to compute one operation at a time. Look at the table of operators, as well as the **sample screen below** to guide you in solving this problem:

Symbol	Operation
+	Addition
-	Subtraction
*	Multiplication
/	Division

Sample Screen [1]run:

```
What do you want to compute?
4.0*6.0
4.000000*6.000000 is equal to 24.000000
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In the event that you are uncertain on how to get data (2nd line in the sample screen run above) from the user following the sample screen run, you are free to make your own way of getting information from the user, provided that what is intended in the problem specification is achieved (produce the same result and formatting shown 3rd line in the sample screen run)

2. Company A processes loan applications based on four items namely: monthly salary, monthly deduction, status (regular or casual), and years of service to the current employer. The company's policy in granting loans is summarized as follows:
   The amount being applied for a loan is: **'Approved'** if all of the following conditions are met:
   a) The amount of loan is not greater than twice the monthly salary
   b) The monthly deduction is not greater than 1/3 of the monthly salary
   c) The loan applicant is a regular employee or the years of service to the current employer are 3 years or more.

[1] Sample screen run means this is what you will be seeing on your screen when a particular program is executed.

'Disapproved' if at least one of the following conditions exists:
a) The amount of loan is greater than 3 times the monthly salary
b) The monthly deduction is greater than 1/2 of the monthly salary

Applications neither approved nor disapproved will be subjected to 'Review' by a loan committee for final disposition.

Write a program which will accept the necessary data of a loan applicant and automatically determine the disposition as 'Credit Accepted', 'Credit Rejected', or 'Review Required'. Use the following variables:
Amt - amount of loan being applied for
Ms - monthly salary
Md - Monthly deduction
Stat - status (R if regular, C otherwise)
Yrs - years of service on the current job

3. Write a C program that will **determine** the additional state tax owed by an employee, if any. The state charges a 4% tax on net income. Net income is determined by subtracting a Php3000.00 for each dependent on gross income. Your program will read gross income, number of dependents, and tax amount already deducted from the user. Your program will then compute the actual tax owed and print the difference between tax owed and tax deducted followed by the message 'SEND CHECK' or 'REFUND' depending on whether this difference is positive or negative.
4. Write a program that displays a positive digit number as a comma separated number (similar to how people would normally write digit numbers). Assume the input can be no more than 9 digits long. [Luckily, we can enter a 9-digit value whole number and store in an integer variable ☺] Important: The input is taken as 1 entire number, not as 3 separate numbers or as 9 separate numbers/characters.

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Follow the screen format specified below:
**********NUMBER SEPARATOR**********
Please input a 9 digit number!  (or less)
123456
You would write that normally as
123,456
Thank You!
**********************************

**********NUMBER SEPARATOR**********
Please input a 9 digit number!  (or less)
123
You would write that normally as
123
Thank You!
**********************************

**********NUMBER SEPARATOR**********
Please input a 9 digit number!  (or less)
1234567
You would write that normally as
1,234,567
Thank You!
**********************************
```

5. Consider a date following the format ddmmyyyy (i.e., 15112015), write a program that will display the given date following a new format, that is mm/dd/yyyy (i.e., 11/15/2015).