Problems with conditional statement and loops

1. Ask the user to enter a four digit number and check whether the sum of the first and the last digits is same as the sum of the second and the third digits.

2. The centripetal force acting on a body (mass m), moving with a velocity v, in a circle of radius r, is given by the formula $\frac{mv^2}{r}$. The gravitational force on the body is given by the formula $\frac{GmM}{R^2}$, where m and M are the masses of the body and earth and R is the radius of the earth. Ask the user to enter the requisite data and find whether the two forces are equal or not.

3. Find whether a number entered by the user is divisible by 3 and 13.

4. Find whether the number entered by the user is a perfect square.

5. Ask the user to enter a string and find the alphanumeric characters from the string.

6. In the above question find the digits in the strings.

7. Ask the user to enter a number and find whether it is a prime number.

8. Write a program which will find all such numbers which are divisible by 7 but are not a multiple of 5, between 2000 and 3200 (both included).The numbers obtained should be printed in a comma-separated sequence on a single line.

9. Write a program which can compute the factorial of a given numbers.The results should be printed in a comma separated sequence on a single line.Suppose the following input is supplied to the program: 8 Then, the output should be 40320

10. With a given integral number n, write a program to generate a dictionary that contains $(i, i \times i)$ such that is an integral number between 1 and n (both included). and then the program should print the dictionary.Suppose the following input is supplied to the program: 8. Then, the output should be: $\{1 : 1, \quad 2 : 4, \quad 3 : 9, \quad 4 : 16, \quad 5 : 25, \quad 6 : 36, \quad 7 : 49, \quad 8 : 64\}$

11. Write a program, which will find all such numbers between 1000 and 3000 (both included) such that each digit of the number is an even number.The numbers obtained should be printed in a comma-separated sequence on a single line.

12. Write a program that accepts a sentence and calculate the number of letters and digits.Suppose the following input is supplied to the program:hello world! 123. Then, the output should be:LETTERS 10 , DIGITS 3.