**Programming Fundamentals**

**1.Calculate Salary**

Read the question carefully and follow the input and output format.  
  
Karen got salary for this month and she spends 20% of her salary for food and 30% of her salary for travel. If she takes care of other shifts she will get 2% of the salary per day. Given her salary and the number of shifts she handled. Calculate how much she can save in her pocket after spending all these?  
  
**Input and Output Format :**  
First line of input consists of an integer, salary. Next line correspond to the number of shifts. Output consist of an integer, which is saving.  
  
1) Print "Salary too large" when salary is greater than 8000.  
2) Print "Shifts too small" when the shift is less than 0.  
3) Print "Salary too small" when the salary is less than 0.  
  
Include a function named calculateSal(int salary, int shifts) whose return type is an integer, which is the saving.  
  
**Sample Input 1:**  
7000  
5  
**Sample Output 1:**  
4200  
  
**Sample Input 2:**  
8001  
  
**Sample Output 2:**  
Salary too large

**2.Product of Digits**

 In a car racing video game, the car is an object. You can drive the car, turn the car, or stop the car when needed but you need to drive long. You will get money according to the Km you have travelled. For example if you have travelled 123 km then the product of the km (ie 1\*2\*3 = 6) would be the amount you win. Write a program to find the product of the digits in the given input number.

 Include a function named **productDigits** that accepts an integer argument and returns an integer that corresponds to the product of digits in the integer.

The function returns -1 if the input number is negative or greater than 32767.

 If the function returns -1, print Invalid Input.

**Input and Output Format:**

Input consists of an integer.

Output consists of an integer.

Refer sample output for formatting specifications.

**Sample Input 1:**

32

**Sample Output 1:**

6

**Sample Input 2:**

-67

**Sample Output 2:**

Invalid Input

**3.Sum & Product**

Two numbers are given as input. The first one is the sum of two numbers and the other is the product of two numbers.

The output contains two numbers separated by space which corresponds to x and y in ascending order.

**1.Sample Input:**

5 6

**1.Sample Output:**

2 3

**2.Sample Input:**

15 50

**2.Sample Output:**

5 10

**4.Greatest Among Integers**

Write a Java Program to Calculate the Maximum among them and Sum of all elements in the Array

Input (i) is the Number of elements in the Integer Array

(ii)Second Input Elements in the Array

**1.Sample Input:**

Enter the Number of Integers:

5

9

8

11

12

15

**1.Sample Output:**

Maximum among the Input:

15

Sum of all the Elements:

55

**2.Sample Input:**

Enter the Number of Integers:

5

3

12

33

22

55

**2.Sample Output:**

Maximum among the Input:

55

Sum of all the Elements:

115

**5.Leap Year**

Write a program to find whether the given input year is a Leap Year.

Include a function named **checkLeapYear** that accepts an integer and returns an integer. The function returns

1. 1 if the input is a Leap Year
2. 0 if the input is not a Leap Year
3. -1 if the input is a negative number

Print Invalid Input if the function returns -1.

**Input and Output Format:**

Input consists of a single integer.

Refer sample output for formatting specifications.

**Sample Input 1:**

2000

**Sample Output 1:**

yes

**Sample Input 2:**

1610

**Sample Output 2:**

No

**6.Factorial**

Write a program to find the factorial of a given number.

Include a function named **findFactorial** that accepts an integer argument and returns an integer that corresponds to factorial. If the input value is negative or greater than 10, the function returns -1.

If the function returns -1, print Invalid Input.

**Input and Output Format:**

Input consists of a single integer.

Output consists of an integer.

Refer sample output for formatting specifications.

**Sample Input 1:**

4

**Sample Output 1:**

24

**Sample Input 2:**

-67

**Sample Output 2:**

Invalid Input