

Due date: Thursday January 31, 2019.

Exercise 1

Sum/Products of digits: Write a program that asks the user to input an integer N , and determines the sum and product of its digits and prints them out.

Example:

$N = 524$

The sum of digits is: 11

The product of digits is: 40

Exercise 2

Write a program that asks the user to input an integer N , and determines whether any digit is repeated in the number. The program should output a message whether a repeated digit is found or not.

Example:

$N = 5245$

The digit 5 is repeated.

Example:

$N = 5247$

The number does not contain any repeated digit.

Exercise 3

Factorial: Read an integer N from the user then display the factorial of this number, $N!$. Note that, the factorial of a negative number is undefined. In case the user enters a negative number, the program should notify the user and then ask him to enter a positive number instead.

Recall that, $N! = N * (N-1) * (N-2) * \dots * 2 * 1$

Example:

Please enter a positive number: 6

The factorial of 6 is:

$6! = 720$

Exercise 4

Product of first N odd numbers: Read an integer N from the user then display the product of all odd numbers smaller than or equal to N (if N is even, it should not be included in the product).

Example:

Please enter a positive number: 7

The product of all odd numbers smaller than or equal to 7 is $1*3*5*7 = 105$

Example:

Please enter a positive number: 6

The product of all odd numbers smaller than or equal to 6 is $1*3*5 = 15$

Exercise 5

Cash Register:

1. Ask the user to enter the total amount (in CAD) of the purchased items.
2. Ask the user to enter the total amount (in CAD) paid by the customer.
3. Now, the program should display the exact number of bills to be returned to the customer.

Example:

Enter the total amount of the bill: 326

Enter the amount paid by the customer: 405

You should return to the customer the following:

100\$ bills: 0

20\$ bills: 3

10\$ bills: 1

5\$ bills: 1

1\$ coins: 4