1. Write a program to produce the sum of 1, 2, 3, ..., to 100. Store 1 and 100 in variables lowerbound and upperbound, so that we can change their values easily. Also compute and display the average. The output shall look like:

   The sum of 1 to 100 is 5050
   The average is 50.5

   Note: use while and do while to solve the problem

2. Write a program to find the "sum of the squares" of all the numbers from 1 to 100, i.e. 1*1 + 2*2 + 3*3 + ... + 100*100.

3. Write a program to compute the product of integers from 1 to 10 (i.e., 123...10), as an int.

4. Write a program to print the first 20 Fibonacci numbers F(n), where F(n)=F(n–1)+F(n–2) and F(1)=F(2)=1. Also compute their average. The output shall look like:

   The first 20 Fibonacci numbers are:
   1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 1597 2584 4181 6765 The average is 885.5

5. Write a program that prompts user for three integers. The program shall read the inputs as int; compute the sum, product, minimum and maximum of the three integers; and print the results.

6. Write a program that prompts user for two integers. The pro gram shall read the inputs as int, save in two variables called number1 and number2; swap the contents of the two variables; and print the results.

   Enter first integer: 4
   Enter second integer: -5
   After the swap, first integer is: -5, second integer is: 4

7. Write a program that prompts user for two integers. The pro gram shall read the inputs as int, save in two variables called number1 and number2; swap the contents of the two variables; and print the results.

```
Enter first integer: 4
Enter second integer: -5
```

```
After the swap, first integer is: -5, second integer is: 4
```
Note: without using temporary variable.

8. Write a program that prompts user for a positive integer. The program shall read the input as int; compute and print the sum of all its digits. For examples,

```
Enter a positive integer: 12345
The sum of all digits is: 15
```