Labwork – Nested loops

1. Write a C++ program that does the following:

   The program prints a triangular pattern that is x rows high.
   The characters 0 and 1 are used to print the pattern.
   Odd numbered rows are printed using a 1 and even numbered rows are printed using a 0.

   For example, if the user enters 4 the program should print the following pattern with 4 rows.

   ```
   1
   00
   111
   0000
   ```

2. Write a complete C++ program that does the following:

   A table of factorials (user supplies the number)

   ```
   1! = 1 = 1
   2! = 2 x 1 = 2
   3! = 3 x 2 x 1 = 6
   4! = 4 x 3 x 2 x 1 = 24
   5! = 5 x 4 x 3 x 2 x 1 = 120
   ```

3. Write a complete C++ program that does the following:

   The program prints an x × x square pattern of * symbols in such a way that rows and columns are separated by rows and columns of − symbols.

   Sample run: if user enters 3, output:

   ```
   *-*-*
   ------
   *-*-*
   ------
   *-*-*
   ```