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
   2! = 2 \times 1 = 2
   3! = 3 \times 2 \times 1 = 6
   4! = 4 \times 3 \times 2 \times 1 = 24
   5! = 5 \times 4 \times 3 \times 2 \times 1 = 120

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

   The program prints an x \times 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:

   *_*_*
   ------
   *_*_*
   ------
   *_*_*