1. **(Problem 44)** Write a complete C++ program that does the following.
   a. The program asks the user to enter a positive integer.
   b. The program reads a value n entered by the user. If the value is not legal, the program should terminate immediately.
   c. The program prints two copies of a triangular pattern with side n. Each triangle has a horizontal side at the top and a vertical side at the right. The second copy is underneath the first. For example, if the user enters 3 for n the program should print the following picture.

   ```
   ***
   **
   *
   ***
   **
   *
   ```

2. **(Problem 56)** Write a complete C++ program that does the following.
   a. The program asks the user to enter a positive integer.
   b. The program reads a value n entered by the user. If the value is not legal, the program repeatedly makes the user type in another value until a legal value of n has been entered.
   c. The program prints two adjacent triangular patterns with side n. Each triangle has a horizontal side at the top and a vertical side at the right.
   For example, if the user enters 4 for n the program should print the following picture.

   ```
   ***** *****
   ***  ****
   ***   ***
   **    **
   *     *
   ```
3. **(Problem 116)** Write a complete C++ program that does the following.
1. It asks the user to enter an integer that is at least 3.
2. The program reads a value x entered by the user. If the value is not legal, the program repeatedly makes the user type in another value until a legal value of x has been entered.
3. The program prints a picture with x columns. The picture should display a left pointing arrow pattern. For example, if the user enters 4 for x the program should print the following picture.

```
* 
* 
* 
* 
* 
* 
* 
```

4. **(Problem 124)** Write a complete C++ program that does the following.
1. It asks the user to enter an odd positive integer.
2. The program reads a value n entered by the user. If the value is not legal, the program terminates.
3. The program prints an n × n grid displaying a large letter X. The left half of the X should be made with the character +, the right half should be made with the character x and the very center should be a *. For example, if the user enters 7 for n the program should print the following picture.

```
+   x
+   x
+ x 
+ x 
*    
+ x 
+ x 
+   x
```