

Due date: February 12, 2019.

Exercise 1

Draw a triangle: Write a program that asks the user to input an integer N , and draws a right triangle as follows:

Example: $N=4$

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* *
*  *
* * * *
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Exercise 2

The Taylor expansion of the function $\sin(x)$ around the point $x = 0$ is given by:

$$\sin(x) = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \dots$$

Write a C++ program that takes a real value of x and computes the sine of that number (up to a certain precision). Your program should output the response both in fixed point format and in scientific format.

Your program should keep taking numbers from the user until a sentinel value of your choice is input by the user.

Exercise 3

A palindrome is a number or a text phrase that reads the same backward as forward. For example, each of the following five-digits integers is a palindrome. 12321, 55555, 45554, 11611. Write a program that reads in a five-digit integer and determines whether it is a palindrome. (you may use division and remainder operators to separate the number into its digits (similar to what we did in class.)).