Homework

The Goldbach Conjecture

The Goldbach's Conjecture states that any positive even integer greater than two can be written as a sum of two primes. Given a positive even n not exceeding 10000, output two prime numbers such that their sum equals n. Write a function that checks whether its argument is prime.

4	2 2
992	73 919
16	3 13
20	3 17

Palindrome numbers

Input 2 positive numbers a and b. It's guaranteed that a <= b. Print all the numbers from interval [a, b], that are the same from both sides. Those numbers are called palindromes. Maybe you should reverse the number, e. g. reverse 105 and get 501.

8 25	8 9 11 22
100 120	101 111
100 150	101 111 121 131 141
13000 13500	13031 13131 13231 13331 13431

Suffix Sums

You're given a sequence of real numbers A. Print a sequence B so that, i-th element of the sequence B is equal to the sum of all elements in sequence A starting from i-th.

Вход	Выход
1.5 2.5 3	7.0 5.5 3.0
1 2 3 4 5	15.0 14.0 12.0 9.0 5.0

Cyclic shift

A cyclic shift of a sequence to the right is a sequence that is built by shifting the last element of an initial sequence to the beginning. Given numbers N and k and a sequence of whole numbers of length N, output the result of consecutive shifting to the right k times.

5 2 1 2 3 4 5	4 5 1 2 3
6 1 7 1 7 2 6 1	1 7 1 7 2 6
5 5 9 100 6 0 1	9 100 6 0 1
3 1000 9 1 2	2 9 1

Tree

Input the base width of the tree(number of ‘*’ in the bottom) and draw tree with symbols *. You’re guaranteed that the number is odd. You have to decide how many spaces and ‘*’ to print in first line, and print them, then how many spaces and ‘*’ to print in the second line and so on.

5	 * *** *****

9	* *** ***** ******* *********