1. Center Point

You are given the coordinates of two points on a [Cartesian coordinate system](#) - X1, Y1, X2 and Y2. **Create a method** that prints the point that is closest to the center of the coordinate system (0, 0) in the format (X, Y). If the points are on a same distance from the center, print only the first one.

Examples

Input	Output
2 4 -1 2	(-1, 2)

2. Longer Line

You are given the coordinates of four points in the 2D plane. The first and the second pair of points form two different lines. Print the longer line in format "(X1, Y1)(X2, Y2)" starting with the point that is closer to the center of the coordinate system (0, 0) (You can reuse the method that you wrote for the previous problem). If the lines are of equal length, print only the first one.

Examples

Input	Output
2 4 -1 2 -5 -5 4 -3	(4, -3)(-5, -5)

3. Cube Properties

Write a program that can calculate the length of the face diagonals, space diagonals, volume and surface area of a **cube** (http://www.mathopenref.com/cube.html) by a given side. On the first line you will get the side of the cube. On the second line is given the parameter (**face**, **space**, **volume** or **area**).

Output should be rounded to the second digit after the decimal point:

Examples

Input	Output
5 face	7.07
5 volume	125.00

4. Geometry Calculator

Write a program that can **calculate the area** of **four different geometry figures** - triangle, square, rectangle and circle.

On the first line you will get the **figure type**. Next you will get parameters for the chosen figure, **each on a different line**:

- Triangle - side and height
- Square - side
- Rectangle - width and height
- Circle - radius

The output should be rounded to the second digit after the decimal point:

Examples

Input	Output
triangle 3 6	9.00
rectangle 4 5	20.00

5. Master Numbers

A master number is an integer that holds the following properties:

- Is **symmetric** (palindrome), e.g. 5, 77, 282, 14341, 9553559.
- Its **sum of digits is divisible by 7**, e.g. 77, 313, 464, 5225, 37173.
- Holds at least **one even digit**, e.g. 232, 707, 6886, 87578.

Write a program to **print all master numbers** in the range [1…**n**].

Examples

Input	Output
600	232 383 464 545

Input	Output
5000	232 383 464 545 626 696 707 858 1661 2552 3443 4334

Hints

1. Write 3 utility methods:
   - **IsPalindrome(int num)**
   - **SumOfDigits(int num)**
   - **ContainsEvenDigit(int num)**
2. Loop through all numbers in range [1…**n**] and check every number with the helper methods.