Offline-1 for A2, B2, C2

Problem 1

Description

Given four digits in any number system, show the minimum four-digit number that can be constructed with them.

Input/Output Format

The first line of input contains an integer b, denoting the base of the number system. The next line contains four space-separated characters denoting the digits in the b-based number system.

Print a single line indicating the minimum four-digit number, in the b-based number system, that can be constructed with the given digits.

You can safely assume that no input will violate the following constraints:
$2 \leq b \leq 30$, all the digits will be valid in the b-based number system (for example, in a 20-based number system the digits can be 0-9 and A-J (uppercase only).

Sample

Input	Output
8 4 1 3 2	1234
20 G H 1 A	1AGH
2 1 0 1 1	1011
10 9 1 2 3	1239

Problem 2

Description

Given a circle and a line segment find out which one of the following is true:
1. The line segment is inside the circle
2. The line segment is outside the circle
3. The line segment touches the circle
4. The line segment intersects with the circle

Input/Output Format

The first line of input contains three integers, x, y, and r, and the second line contains four integers a, b, c, d. Here, (x, y) is the coordinate of the circle's center and r is the circle's radius. (a, b) and (c, d) are the coordinates of the two endpoints of the line segment.

Print a single line mentioning which cases as mentioned earlier is true.

You can safely assume that no input will violate the following constraints:
$-1000 \leq x, y, a, b, c, d \leq 1000$, and $0 \leq r \leq 3000$.

Sample

Input	Output
0 0 10 0 0 2 2	The line segment is inside the circle
4 3 10 100 100 200 200	The line segment is outside the circle
1 1 10 100 100 0 0	The line segment intersects with the circle
0 0 20 -20 -100 -20 100	The line segment touches the circle

Special Instructions:

You cannot use loop, array, user-defined function or other advanced topics, not covered in the theory classes, to solve the problems. You can use typecasting, if...else if...else, switch-case, ternary operator etc. to solve them.

Submission Instructions:

1. Create a folder with your student id (2105xxx).
2. Create separate files for each task and rename them as problem_1.c, problem_2.c etc.
3. Put only the .c files created in step 2 in the folder created in step 1.
4. Zip the folder (2105xxx.zip) and upload it on Moodle.

Plagiarism Policy: You will be penalized -100% in case of any plagiarism irrespective of the source and destination.

Submission Deadline: 13/12/2022 11:00 PM