PROBLEMS   SUBMIT   STATUS   STANDINGS   CUSTOM TEST

A. Vasily the Bear and Triangle

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

Vasily the bear has a *favorite rectangle*, it has one vertex at point $(0, 0)$, and the opposite vertex at point (x, y). Of course, the sides of Vasya's favorite rectangle are parallel to the coordinate axes.

Vasya also loves triangles, if the triangles have one vertex at point $B = (0, 0)$. That's why today he asks you to find two points $A = (x_1, y_1)$ and $C = (x_2, y_2)$, such that the following conditions hold:

- the coordinates of points: x_1, x_2, y_1, y_2 are integers. Besides, the following inequation holds: $x_1 < x_2$;
- the triangle formed by point A, B and C is rectangular and isosceles (is right);
- all points of the favorite rectangle are located inside or on the border of triangle ABC;
- the area of triangle ABC is as small as possible.

Help the bear, find the required points. It is not so hard to proof that these points are unique.

Input

The first line contains two integers x, y ($-10^9 \le x, y \le 10^9$, $x \ne 0$, $y \ne 0$).

Output

Print in the single line four integers x_1, y_1, x_2, y_2 — the coordinates of the required points.

Examples

input
10 5
output
0 15 15 0

input
-10 5
output
-15 0 0 15

Note

Figure to the first sample

Codeforces Round #195 (Div. 2)

Finished

→ **Virtual participation**

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

[Start virtual contest]

→ **Problem tags**

[implementation] [math]

No tag edit access

→ **Contest materials**

- Announcement   ✕
- Tutorial   ✕