

Problem D. Simple Polygon

Input file: *standard input*
Output file: *standard output*
Time limit: 1 second
Memory limit: 512 mebibytes

Although bobo is truly smart, he just like you to find a simple polygon for him. The polygon you are going to find should satisfy the following conditions.

1. The polygon is simple. That is to say, any two non-adjacent edges won't intersect or touch and any two adjacent edges have exactly one common point.
2. Edges of the polygon are parallel to either x -axis or y -axis.
3. The perimeter of the polygon equals to l , while the area equals to s .

Input

First line of the input contains two integers l and s ($4 \leq l \leq 10^9, 1 \leq s \leq 10^9$).

Output

The first line contains an integer n , which denotes the number of vertices of the polygon you have found ($4 \leq n \leq 1000$).

Each of the following n lines contains 2 integers x_i, y_i , which denote the coordinates of points (in clockwise or counter-clockwise order) ($0 \leq x_i, y_i \leq 10^9$).

Any appropriate solution will get accepted.

If no such polygon can be found, simply print "-1".

Examples

standard input	standard output
4 1	4 0 0 1 0 1 1 0 1
4 2	-1