

A Heronian Triangle has sides with integer length and integer area. For this problem, a Heronian Triangle whose radius of circum-circle is also integer is called Super Heronian Triangle (SHT). Given the radius of Circum Circle and area of an SHT, you will have to find such a triangle all whose side lengths are less than 40001.

Input

The input file contains at most 300 lines of inputs. Each line contains two integers R ($0 < R < 500000$) and A ($0 < A < 700000000$). Here R and A denotes the radius of circum circle and Area of an unknown SHT. Input is terminated by a line containing two zeroes which obviously should not be processed.

Output

For each line input produce one or more line of output. If there is no SHT with the given radius and area and all side with lengths less than 40001, print three '-1' (Minus 1) separated by single space. Other wise print the length of sides of the SHT in ascending order. If there is more than one such triangle print the one whose smallest side has minimum length.

Sample Input

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5 24
5 23
0 0
```

Sample Output

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6 8 10
-1 -1 -1
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