

Crisis

Input file: `stdin`
Output file: `stdout`
Time limit: 2 seconds
Memory limit: 256 megabytes

Finance minister of Lemuria reported to the King that the economic crisis is getting worse. In the first month of the crisis, the budget income was P_1 , and in the second month, it was P_2 . The minister's analysis showed that the excessive spendings on the military will cause the budget income to change by the following formula:

$$P_i = P_{i-2} - P_{i-1}$$

The minister said that sooner or later, the current policy would cause a budget deficit (that is, the income in some month will become negative). After that, he was retired by the King.

The ex-minister then turned to the experts. They, in turn, hired you to check whether his forecast was right. Assuming that the formula above is right, find out whether the income in some month will become negative, and if so, find the number of the first such month and the budget income in that month.

Input

The first and only line of the input file contains integers P_1 and P_2 which are the budget income in the first and second months of the crisis, respectively ($0 \leq P_1, P_2 \leq 2 \times 10^9$).

Output

On the first line of the output file, write two numbers separated by a space. If the income in some month will become negative, the first number should be the number of the first such month, and the second number should be the budget income in that month. Otherwise, both numbers should be zeroes. Months are numbered starting from 1.

Examples

| stdin | stdout |
|-----------|---------|
| 34 21 | 12 -1 |
| 2310 2011 | 5 -1413 |