



Arithmetic Sequences

An *Arithmetic Sequence* of integers is one in which the next number in the sequence is obtained by adding a constant to the current number. For example, this is an arithmetic sequence (the constant is 7):

3, 10, 17, 24, 31, ...

Given a part of an arithmetic sequence with some numbers missing, fill in the missing numbers.

Input

Each input will consist of a single test case. Note that your program may be run multiple times on different inputs. Each test case will consist of a single line with exactly ten integers. Eight of them will be **0**, the other two will be positive. The two positive integers may be anywhere among the ten integers, and will be no larger than **1,000**. The **0** values represent missing values from the sequence.

Output

If it is possible to complete the sequence with integers, then output ten integers on a single line, with a single space between them, by replacing the **0** values with the correct numbers. If it is not possible to complete the sequence with integers, simply output a single **-1**. Although the two non-zero inputs are positive, the rest of the sequence might not be. Likewise, while the two non-zero inputs are $\leq 1,000$, the rest of the sequence might not be.

Sample Input

Sample Output

5 0 15 0 0 0 0 0 0 0	5 10 15 20 25 30 35 40 45 50
5 0 0 15 0 0 0 0 0 0	-1
0 0 0 15 0 3 0 0 0 0	33 27 21 15 9 3 -3 -9 -15 -21
0 0 19 0 0 0 0 0 19 0	19 19 19 19 19 19 19 19 19 19