Given an increasing sequence of integers $a_1, a_2, a_3, \ldots, a_k$, the E-transform produces a sequence of the same length, $b_1, b_2, b_3, \ldots, b_k$ such that

- $b_1 = a_1$
- for $j > 1$, b_j is the only integer $a_{j-1} < b_j \leq a_j$, which is divisible $by a_j - a_{j-1}$.

For example, from $S = 0, 1, 4, 9, 16, 25, 36, 49$ one gets $E(S) = 0, 1, 3, 5, 14, 18, 33, 39$.
A sequence S such that $E(S) = S$ is called an eigensequence.
For instance, $S = 2, 3, 4, 6, 8, 12, 16, 18, 20$ is an eigensequence.

Given integers a_1 and a_n, how many eigensequences (of any length) start with a_1 and end with a_n?

Input

Input has many data lines, followed by a terminating line. Each line has two integers, a_1 and a_n. If $a_1 < n$, it's a data line. Otherwise it's a terminating line that should not be processed. On each line, $0 \leq a_1 \leq a_n \leq 44$. This guarantees that each output fits into 32 bit integer.

Output

For each data line, print a line with a_1, a_n, and x, where x is the number of eigensequences (of any length) that start with a_1 and end with a_n.

Sample Input

```
0 3
5 7
2 8
0 0
```

Sample Output

```
0 3 3
5 7 1
2 8 12
```