

Task 1 — Minimal pour out of vessels

We can use a set of vessels to fill a tank with a precisely stated amount of fluid. The problem is to use them in an optimal way to avoid too much labour and inadequacy. For simplicity we assume that we have a tank of capacity no more than 100000 litres and a set of vessels with precise capacity in litres. We can use vessels to fill the tank (using tap to fill a vessel first), and we can also use vessels to empty it (using sink to empty a vessel next). We should minimize the number of the fill and pour away operations of the tank to obtain the given amount of fluid inside.

Your program has to read the capacity of each vessel (we will have no more than 1000 vessels, the maximum capacity of the vessel is 10000 litres) and the amount of fluid the tank should be filled with. The maximum amount of fluid the tank should be filled with is 50000 litres.

The program should compute the minimal number of the fills and pours away to obtain a given amount of fluid inside in an efficient manner.

Suggestion Algorithm of exponential-time complexity will probably not be accepted, because it can exceed the execution time limit.

Input Specification

The input contains as many lines as problems to solve, plus one line with a single 0 (zero) to denote the end.

Each problem line is a sequence of positive integers describing the amount of fluid the tank should be filled with and the capacities of available vessels; 0 (zero) denotes the end of the line.

Output Specification

The output is a separate line for each, set of vessels containing the minimal number of add and pour away operations or the string "Impossible" in the case the solution does not exist.

Sample Input

```
49999 9000 100 2600 0
50000 9000 100 2600 0
8 3 7 0
5 3 7 0
5000 2 4 12 11 34 0
17 2 4 8 0
0
```

Sample Output

```
Impossible
9
4
5
148
Impossible
```