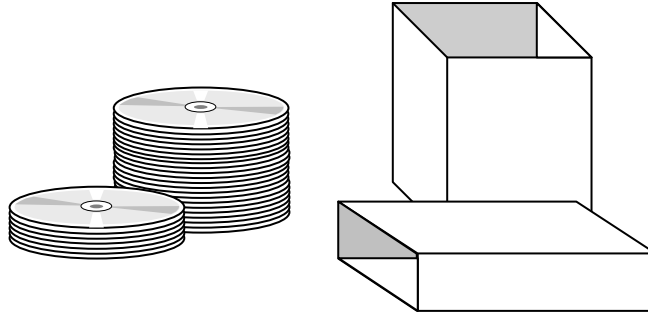


Ali's Disorganized Discs

Filename: organize

Ali has tons of game CDs and DVDs for all of his family's different console game systems, but unfortunately his kids have lost all of the disc cases. He would like to organize these discs, so he got a bunch of different boxes to put them in.



Ali already got his kids to separate the discs into perfectly-aligned stacks, as shown. Now he wants you to help him find a box to hold each stack.

If your program works, Ali's wife might even use it to reorganize the dinner plates in their kitchen cabinets.

The Problem:

Write a program to determine whether a stack of discs will fit into an empty rectangular box, when given the interior dimensions of the box, and the number of discs in the stack.

Every CD and DVD is exactly 120mm in diameter. When stacked up, each disc is close to 2mm in thickness—for this problem, we'll assume exactly 2mm, so a stack of 5 discs is exactly 10mm high. The entire stack must be kept together with the outer edges aligned, even when placed in the box. The bottom disc in the stack must align flat against one of the interior surfaces of the box. The aligned surface might happen to be the front or back of the box, the bottom of the box, or merely a side, depending on how the box is oriented.

The Input:

The input will contain several descriptions of empty boxes and stacks of discs to be compared. Each description will contain exactly four positive integers separated by spaces, all on the same line. The first three numbers are the dimensions of the box, in millimeters. The last number is the number of CDs/DVDs in the stack, and will be no greater than 5000.

The last description line will be followed by a line containing four zeroes.

The Output:

For each description line in the input, your program should output a single line. If the stack of discs fits entirely within the box, output a line of the form:

Box *b*: Stack of *s* discs fits!

If the stack of discs does not fit into the box, output a line of the form:

Box *b*: Stack of *s* discs does not fit.

where *b* is the number of the description line in the input, starting from 1, and *S* is the number of discs in the stack.

Sample Input:

```
120 200 600 300
40  400 100  25
100 150 150  12
0 0 0 0
```

Sample Output:

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Box 1: Stack of 300 discs fits!
Box 2: Stack of 25 discs does not fit.
Box 3: Stack of 12 discs fits!
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