Let's learn about list comprehensions! You are given three integers x, y and z representing the dimensions of a cuboid along with an integer n. Print a list of all possible coordinates given by (i, j, k) on a 3D grid where the sum of $i + j + k$ is not equal to n. Here, $0 \leq i \leq x; 0 \leq j \leq y; 0 \leq k \leq z$. Please use list comprehensions rather than multiple loops, as a learning exercise.

Example

$x = 1$

$y = 1$

$z = 2$

$n = 3$

All permutations of $[i, j, k]$ are:

$[[0, 0, 0], [0, 0, 1], [0, 0, 2], [0, 1, 0], [0, 1, 1], [0, 1, 2], [1, 0, 0], [1, 0, 1], [$

.

Print an array of the elements that do not sum to $n = 3$.

$[[0, 0, 0], [0, 0, 1], [0, 0, 2], [0, 1, 0], [0, 1, 1], [1, 0, 0], [1, 0, 1], [1, 1, 0], [$

Input Format

Four integers x, y, z and n, each on a separate line.

Constraints

Print the list in lexicographic increasing order.

Sample Input 0

```
1
1
1
2
```

Sample Output 0

```
[[0, 0, 0], [0, 0, 1], [0, 1, 0], [1, 0, 0], [1, 1, 1]]
```

Explanation 0

Each variable x, y and z will have values of 0 or 1. All permutations of lists in the form

$[i, j, k] = [[0, 0, 0], [0, 0, 1], [0, 1, 0], [0, 1, 1], [1, 0, 0], [1, 0, 1], [1, 1, 0],$

.

Remove all arrays that sum to $n = 2$ to leave only the valid permutations.

Sample Input 1

```
2
2
2
2
```

Sample Output 1

```
[[0, 0, 0], [0, 0, 1], [0, 1, 0], [0, 1, 2], [0, 2, 1], [0, 2, 2], [1, 0, 0], [1
```

Change Theme Language Pypy 3

```
if __name__ == '__main__':
    x = int(input())
    y = int(input())
    z = int(input())
    n = int(input())
    coordinates = [[i, j, k] for i in range(x + 1) for
range(z + 1) if (i + j + k) != n]
    print(coordinates)
```

Line: 7 Col: 23

Upload Code as File Run Code Submit Code

Test against custom input

You have earned 10.00 points!

You are now 3.89 points away from the 3rd star for your python badge.

90% 106.11/110

Congratulations

You solved this challenge. Would you like to challenge your friends? Next Challenge

Test case 0

Test case 1

Test case 2

Test case 3

Test case 4

Test case 5

Test case 6

Compiler Message

Success

Input (stdin) Download

```
1
1
1
2
```

Expected Output Download

```
[[0, 0, 0], [0, 0, 1], [0, 1, 0], [1, 0, 0], [1, 1, 1]]
```