## Introduction

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| |  | | --- | | problem **0** | | **X Liters of  Hardware  Troubles** | | y points | |  |
|  |  |

All the chips fell out of my motherboard…again. I don’t want to talk about it. I know how many leads there on the edges of some of these sockets, but I don’t remember where each chip came from.

I know that if you sum the number of contacts going into any socket, you’d get the number of contacts on the chip that’s supposed to go there. But it gets really confusing really fast. Maybe you could help me out?

For example, if the board were:

0 1 2 3 0

4 x x x 5

0 6 7 8 0

The leftmost x must be at least 11 since the sum of the surrounding numbers is 11.

The middle x must be at least 9 since the sum of the surrounding numbers is 9.

The rightmost x must be at least 16 since the sum of the surrounding numbers is 16.

If the leftmost x were 12, then the middle x must be at least 10 because it would need to consume one lead from the leftmost x. So, all leads go somewhere.

# Sample Input

The program input consists of 1) the width of the board in width/height dimensions, 2) the representation of the motherboard (with empty slots denoted with ‘x’), and 3) the list of loose chips, represented by their lead counts.

4 4

0 8 7 0

1 x x 6

2 x x 5

0 3 5 0

9

14

6

12

# Sample Output

The program should output the motherboard layout, with the missing chips placed in their appropriate locations:

0 8 7 0

1 9 14 6

2 6 12 5

0 3 5 0