Telerik Academy Alpha 2017-2018 - C# Entry Exam

Task 2 - Crooked Stairs

You need to design the staircases for the first skyscraper in Sofia. But not just any ordinary stairs - in order to keep the people awake while using them, each brick you place must have a different height, even if that violates the laws of physics.

A staircase is a **sequence of bricks**, ordered in a shape, similar to a **triangle**. Each brick triangle is being build in layers from the **top to the bottom** (as we said, we don't care about physics).

The **first layer** of the brick triangle contains only the first brick of the sequence. The **second layer** contains the second and third bricks and so on. A brick triangle of **3 layers** would look something like this:

Brick1

Brick2 Brick3

Brick4 Brick5 Brick6

The sequence of bricks begins with **three integers** (the brick heights), that can be either **positive or negative**. The height of each brick, after the third one, is calculated by the sum of the last three bricks, using the formula -> $\mathbf{Bh_n = Bh_{n-1} + Bh_{n-2} + Bh_{n-3}}$, where **Bh** is the brick height.

So if **Brick1** has a height of 2, **Brick2** of 1 and **Brick3** of 5, the triangle would look like this:

2

1 5

8 14 27

- **Brick4**'s height is calculated by $\mathbf{Bh_4 = Bh_{4-1} + Bh_{4-2} + Bh_{4-3}}$ which results to $\mathbf{Bh_4 = 2 + 1 + 5 = 8}$
- **Brick5**'s height is calculated by $\mathbf{Bh_5 = Bh_{5-1} + Bh_{5-2} + Bh_{5-3}}$ which results to $\mathbf{Bh_5 = 1 + 5 + 8 = 14}$
- **Brick6**'s height is calculated by $\mathbf{Bh_6 = Bh_{6-1} + Bh_{6-2} + Bh_{6-3}}$ which results to $\mathbf{Bh_6 = 5 + 8 + 14 = 27}$

Input

- The first **three lines** will contain the heigths of the first three bricks of the brick sequence.
- On the **fourth line** of the input there will be the number **L** – the number of layers in the brick triangle.

Output

- The output should contain exactly L amount of lines.
- The first line should consist of exactly 1 number.

- The second line should consist of exactly 2 numbers, separated by a space (" ").
- The third line should consist of exactly 3 numbers, separated by a space (" ").
- And so on...

Constraints

- The number of lines is in the range [2..20] inclusive.

Examples

Input	Output	Input	Output
2	2	3	3
1	1 5	-2	-2 -1
5	8 14 27	-1	0 -3 -4
3		4	-7 -14 -25 -46