2016 RIFFLED FEATHERS

Tradition informs us that at the inaugural pigeon racing opening ceremony, the simultaneous release of the competitors led to such a darkening of the sky that many of the birds thought it was night-time and fell asleep in flight, and their owners were stunned at the unexpected eclipse and fell to their knees in adoration. Thus (perhaps) the modern by-law regulating the opening and closing ceremonies states "Birds are to fly in a single straight line". Tradition now records the flight of the pigeons in the ceremonies by a permutation of the integers from 1 to n, as each pigeon is assigned a unique integer in this range.

Behind the scenes at the closing ceremony things are a little more complex. Space considerations mean that the pigeons await their turn in two lines, the first containing the first m birds that appeared in the opening (in the same order), and the second containing the remaining n-m birds (again, in the opening order). Birds are released from their lines in order. To make the closing exciting, the by-laws allow for successive birds to be released from either line.

For example, suppose that the opening is 1 2 3 4 7 6 5 and that m is 4:

- The first line will be 1 2 3 4 and the second line 7 6 5;
- If the birds are alternately released from the two lines the closing will be 1 7 2 6 3 5 4 (if we start with the first line) or 7 1 6 2 5 3 4 (if we start with the second line);
- Another example closing is 1 2 7 6 5 3 4.

Tickets to the ceremonies are quite expensive. Some attendees, trying to experience the excitement on a budget, just attend the closing and deduce the opening. The number m is widely published in the official programme, and pundits often expound that it was the i^{th} possible opening. Possible openings are ordered numerically, for example:

- 1 2 3 → 1 3 2 → 2 1 3 → 2 3 1;
- 1 2 3 4 5 6 7 8 9 10 → 1 2 3 4 5 6 7 8 10 9.

The first line of the input will consist of three integers, the number of pigeons n ($1 \leq n \leq 40$) then the size of the first line m ($1 \leq m \leq n$) then the required opening i ($1 \leq i < 2^{63}$). The second line of the input will consist of a permutation of the integers 1 to n, giving the closing.

You should output a single line containing a permutation of the integers 1 to n, indicating the i^{th} possible opening.

SAMPLE INPUT 1

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7 4 1
5 1 6 2 7 3 4
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SAMPLE OUTPUT 1

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1 2 3 4 5 6 7
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SAMPLE INPUT 2

```
7 4 2
5 1 6 2 7 3 4
```

SAMPLE OUTPUT 2

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1 2 7 3 5 6 4
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