

Task Sequence

 6.7 sec.  1536 MB

Bobi has a sequence, but he does not know what it is. He wants to find out what his sequence is, and to do so he can ask himself two types of questions. The first type of question gives him the next element of the sequence. The second type of question tells him whether a given sequence matches his own. The only thing he knows about his sequence is that it has N integers from 1 to K whose sum is S . Bobi's goal is to guess his sequence using as few questions of the first type as possible.

Help Bobi by writing a program that guesses his sequence.

Implementation details

You have to implement the following function, which will be called once by the jury:

```
void solve(int N, int K, int S);
```

This function must find Bobi's sequence, and to do so it may use the following functions in order to ask questions of the two types:

```
int query();
```

This function represents a question of the first type and returns the next number in the sequence. If it is called for the first time, it returns the first number in the sequence; if it is called for the second time, it returns the second number, and so on.

```
void submit(const std::vector<int>& a);
```

This function represents a question of the second type. If the sequence given to the function matches Bobi's one, the program terminates its execution.

Constraints

- $1 \leq N \leq 300$
- $1 \leq K \leq 300$
- $N \leq S \leq N * K$

Scoring

If your solution has not found the correct sequence, or if you have called `query` more than N times, you get 0 points on the respective test. Otherwise, let your number of calls to `query` be Q , and the number of calls of the author be Q_a . Then the points are computed by the following formula: $points = \max(0.1, \min(1.0, (1 - \frac{Q - Q_a}{N - Q_a + 1})^3))$.

Subtasks

Subtask	Points	Required subtasks	Additional constraints
0	—	—	The example.
1	20	0	$1 \leq N \leq 7, 1 \leq K \leq 10$
2	20	0 – 1	$1 \leq N \leq 15, 1 \leq K \leq 15$
3	20	0 – 2	$1 \leq N \leq 30, 1 \leq K \leq 67$
4	20	0 – 3	$1 \leq N \leq 67, 1 \leq K \leq 100$
5	20	0 – 4	$1 \leq N \leq 300, 1 \leq K \leq 300$

Example

Jury	Contestant
<code>solve(5, 5, 15)</code>	<code>query()</code>
1	<code>submit({1, 1, 1, 1, 1})</code>
–	<code>submit({1, 2, 3, 4, 5})</code>
End of the execution.	–

Sample grader

The first line contains the numbers N, K, S . The second line contains the sequence.