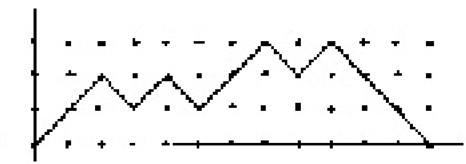
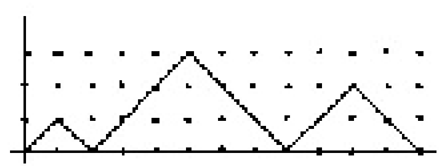
Let us consider paths in the plane integer lattice $Z \times Z$ consisting only of steps (1,1) and (1,-1) and which never pass below the x-axis. A peak at height k is then defined as a point on the path with coordinate $y = k$ that is immediately preceded by a (1,1) step and immediately followed by a (1,-1) step. The pictures below show two such paths: on the left picture we have 4 peaks (2 peaks at height 2 and 2 peaks at height 3); while on the right picture we have 3 peaks (1 peak at height 1, 1 peak at height 2 and 1 peak at height 3).





The problem consists of counting the number of admissible paths starting at (0,0) and ending at $(2n, 0)$ with exactly r peaks at height k.

Input

The input file contains several test cases, each of them consists of one line with the natural numbers n, r and k which define the problem (first number gives n, second number r, and the last one k). Assume that $1 \leq n < 20$, $0 \leq r < 20$, and $1 \leq k < 20$.

Output

For each test case, the output is a single integer on a line by itself, answering the problem, being guaranteed to be less than 2^{31}.

Sample Input

```
3 1 2
10 3 2
```

Sample Output

```
2
2002
```