Problem L
Primal Collection

You are given an array A, which initially has a size of N (indexed from 1 to N) containing distinct integers with values between 1 and $N+1$ inclusive. It is known that this array is *primal*, that is, for any index $i > 1$, A_i will always be smaller than $A_{\lfloor i/2 \rfloor}$.

Denote S as the value between 1 and $N+1$ that does not appear in $A_1, A_2, \ldots, A_N$. You want to append one new element into A, namely A_{N+1}, with S. Then, the following algorithm is executed.

```
algorithm(A):
  x = N + 1
  counter = 0
  while x > 1:
    if A[x] > A[floor(x / 2)]:
      swap(A[x], A[floor(x / 2)]);
      counter = counter + 1
    x = floor(x / 2)
  return counter
```

You want to calculate the number of possible values of the initial array A such that when you append S to A and excecute `algorithm(A)`, it will return K. Note that the initial array A contains distinct integers with values between 1 and $N+1$ inclusive, excluding S, and array A has to be primal. As the answer can be very large, find the answer modulo $998\,244\,353$.

Input

A single line consisting of three integers N S K ($1 \le N \le 100\,000; 1 \le S \le N+1; 0 \le K \le N$).

Output

Output a single integer representing the number of possible values of the initial array A that satisfy the conditions above, modulo $998\,244\,353$.

Sample Input #1

```
5 3 1
```

Sample Output #1

```
4
```

Explanation for the sample input/output #1

The 4 possible arrays that satisfy the conditions are:

- $[6, 5, 1, 2, 4]$,
- $[6, 5, 1, 4, 2]$,
- $[6, 5, 2, 1, 4]$, and
- $[6, 5, 2, 4, 1]$.

Sample Input #2

```
2 2 1
```

Sample Output #2

```
0
```

Sample Input #3

```
7 6 2
```

Sample Output #3

```
40
```