Problem K. Faint

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	512 mebibytes

Consider the set of integers $\{1, 2, \ldots, n\}$ and all its subsets of size k. Let us write each such subset as $a_1, a_2, \ldots, a_k$ where $a_1 < a_2 < \ldots < a_k$. We write them down in lexicographical order row by row, obtaining a table with $\binom{n}{k}$ rows and k columns. Let the j-th integer in the i-th row be $A_{i,j}$.

Your task is to calculate the sum of absolute differences between consecutive numbers in a given column. Formally, given a positive integer m ($1 \le m \le k$), calculate the sum

$$\sum_{i=1}^{\binom{n}{k}-1} |A_{i,m} - A_{i+1,m}|.$$

As the answer can be very large, print it modulo $10^9 + 7$.

Input

The only line of input contains three positive integers n, k and m ($1 \le n \le 10^6, 1 \le m \le k \le n$).

Output

Print a single line with a single integer: the answer to the problem modulo $10^9 + 7$.

Examples

standard input	standard output
4 2 2	4
5 3 2	4

Note

In the first example, the table looks as follows.

$$\begin{array}{cc} 1 & 2 \\ 1 & 3 \\ 1 & 4 \\ 2 & 3 \\ 2 & 4 \\ 3 & 4 \end{array}$$

The answer is $|2 - 3| + |3 - 4| + |4 - 3| + |3 - 4| + |4 - 4| = 4$.