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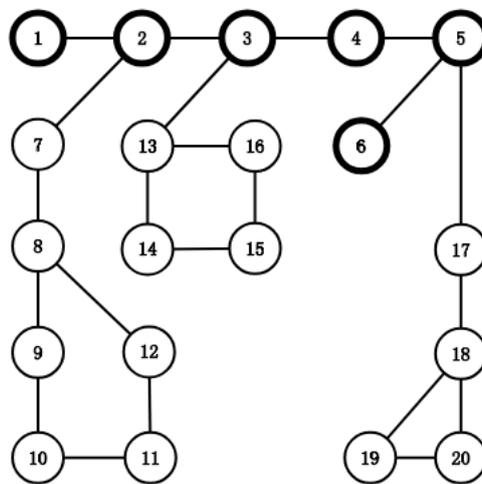
# Chiaki Chain Counting

Input file:            **standard input**  
Output file:           **standard output**  
Time limit:            1 second  
Memory limit:         256 megabytes

An ordinary chain is a graph consisting of sequential (at least two) vertices. Every two adjacent vertices are connected by an edge. The  $k$ -th order Chiaki Chain looks slightly different from a chain. There are  $k$  sub-chains of various lengths extended from  $k$  different vertices on the main chain. At the other side of each sub-chain, there is a simple cycle of length  $3, 4, \dots, k + 2$  respectively. There is no useless vertices or edges on the  $k$ -th order Chiaki Chain.

Note that the main chain and the sub-chains should consist of at least two vertices.

The following image corresponds to the a 3-rd order Chiaki Chain with 20 vertices and 22 edges:



Given  $n$ ,  $m$  and  $k$ , Chiaki would like to know the number of labelled  $k$ -th order Chiaki Chain with  $n$  vertices and  $m$  edges. Since this number may be very large, you are only asked to calculate it modulo  $10^9 + 7$ .

## Input

There are multiple test cases. The first line of the input contains an integer  $T$  ( $1 \leq T \leq 10^5$ ), indicating the number of test cases. For each test case:

The first line contains three integers  $n$ ,  $m$  and  $k$  ( $1 \leq n, m, k \leq 10^6$ ) — the number of vertices and the number of edges in the graph and the order of Chiaki Chain.

## Output

For each test case, output an integer denoting the answer.

## Example

standard input	standard output
4	0
1 1 1	0
3 3 1	0
4 4 1	60
5 5 1	