

# Make Sets

For a given number  $N$  you have  $K$  copies of each number from 1 to  $N$ . Therefore, you have a total of  $N \cdot K$  numbers. You need to form  $M$  sets  $s_1, s_2, s_3, \dots, s_m$  where a set should contain unique numbers (set may be empty).

Now, let  $D$  be the sum of size of all  $M$  sets. (where the size of a set is number of elements in it)

Let  $G(i)$  = number of ways to form  $M$  sets such that  $D$  is equal to  $i$ .

Find  $G(0) + G(1) + \dots + G(N \cdot K)$  modulo  $10^9 + 7$ .

Note: Ordering of sets matters as the sets are numbered.

**For eg:**

$N=2, M=2, K=2$

So, the numbers present initially are (1,1,2,2)

$G(0)=1,$

{ }, { }

$G(1)=4,$

{1}, { }

{2}, { }

{ }, {1}

{ }, {2}

$G(2)=6,$

{1}, {2}

{2}, {1}

{1}, {1}

{2}, {2}

{1,2}, { }

{ }, {1,2}

$G(3)=4,$

{1,2}, {1}

{1,2}, {2}

{1}, {1,2}

{2}, {1,2}

$G(4)=1,$

{1,2}, {1,2}

{ } represents empty set.

So answer =  $G(0) + G(1) + G(2) + G(3) + G(4) = 16$

**Input Specification**

First line of input consists of integer  $t$  denoting number of test cases.  
Each of the next  $t$  lines contain 3 integers  $N, M, K$  where  $N \geq M \geq K$

### Output Specification

Output consists of  $t$  lines. Each line contains the answer modulo  $10^9 + 7$ .

### Constraint

$$1 \leq t \leq 100$$

$$1 \leq M \leq N \leq 100000$$

$$0 \leq K \leq M$$

### Sample Input

3

2 2 2

4 3 1

3 1 1

### Sample Output

16

256

8