

Problem I. Shortest Path

Input file: **standard input**
Output file: **standard output**
Time limit: 3 seconds
Memory limit: 512 megabytes

You are given an undirected weighted graph G with vertices $1, 2, \dots, n$. Please output the sum of the answers to the following x questions:

- The i -th question ($1 \leq i \leq x$): What is the minimum length of path that starts at vertex 1, ends at vertex n , and contains exactly i edges?

For each question, if such a path does not exist, the answer is considered to be 0. A path may use one edge multiple times. Output the answer modulo 998244353.

Input

The first line contains one integer T ($1 \leq T \leq 2000$), the number of test cases.

For each test case, the first line contains three integers n, m, x ($1 \leq n \leq 2000, 0 \leq m \leq 5000, 1 \leq x \leq 10^9$). Each of the next m lines describes an edge of the graph. Edge i is denoted by three integers a_i, b_i, w_i ($1 \leq a_i, b_i \leq n, 1 \leq w_i \leq 10^9$), the labels of vertices it connects and its weight. Note that self-loops and parallel edges may exist.

It is guaranteed that the sum of n over all test cases is no more than 2000 and the sum of m over all test cases is no more than 5000.

Output

For each test case, output one integer modulo 998244353 denoting the answer.

Example

standard input	standard output
4	125
3 2 10	0
1 2 5	15300
2 3 4	840659991
3 0 1000000000	
3 3 100	
1 2 3	
1 3 4	
2 3 5	
4 6 1000000000	
1 2 244	
1 2 325	
1 4 927	
3 3 248	
2 4 834	
3 4 285	