

Problem A. Counting Pairs

Input file: *standard input*
Output file: *standard output*
Time limit: 4 seconds
Memory limit: 256 mebibytes

You are given an undirected graph G consisting of N vertices, numbered from 1 to N , and M edges.

Consider a pair of vertices (a, b) , where $a < b$. Let the *incidence* of (a, b) be the total number of edges with at least one of their endpoints being a or b .

You have to answer Q queries. Each query is given as an integer k , and asks how many pairs of vertices (a, b) are there in G such that $a < b$ and the incidence of (a, b) is strictly greater than k .

Input

The first line of input contains two integers N and M , the number of vertices and the number of edges ($1 \leq N, M \leq 10^6$).

Then M lines follow. The i -th of them contains two integers x_i and y_i , denoting the endpoints of the i -th edge ($1 \leq x_i, y_i \leq N$). There may be self-loops or parallel edges.

The next line of input contains one integer Q , the number of queries ($1 \leq Q \leq 10^6$).

Then Q lines follow. The i -th of them contains an integer k_i , denoting the i -th query ($1 \leq k_i \leq 10^6$).

Output

For each query, print a single line with a single integer: the answer to the query.

Example

standard input	standard output
4 5	6
1 2	5
2 4	
1 3	
2 3	
2 1	
2	
2	
3	