Problem A. Connected Subgraphs

Input file:	`standard input`
Output file:	`standard output`
Time limit:	12 seconds
Memory limit:	1024 megabytes

An algorithm master in graph theory would never endure any disconnected subgraph.

An esthetician would only consider edge-induced subgraphs as necessary subgraphs.

An OCD patient would always choose a subgraph from a given simple undirected graph randomly.

Those are why Picard asks you to calculate, for choosing four different edges from a given simple undirected graph with equal probability among all possible ways, the probability that the edge-induced subgraph formed by chosen edges is connected. Here we say a subset of edges in the graph together with all vertices that are endpoints of edges in the subset form an edge-induced subgraph.

To avoid any precision issue, Picard denotes the probability as p and the number of edges as m, and you should report the value $\left(p \cdot \binom{m}{4}\right) \bmod (10^9 + 7)$. It is easy to show that $p \cdot \binom{m}{4}$ is an integer.

Input

The input contains several test cases, and the first line contains a positive integer T indicating the number of test cases which is up to 10.

For each test case, the first line contains two integers n and m indicating the numbers of vertices and edges in the given simple undirected graph respectively, where $4 \le n \le 10^5$ and $4 \le m \le 2 \times 10^5$.

The following m lines describe all edges of the graph, the i-th line of which contains two integers u and v which represent an edge between the u-th vertex and the v-th vertex, where $1 \le u, v \le n$ and $u \ne v$.

We guarantee that the given graph contains no loops or multiple edges.

Output

For each test case, output a line containing an integer corresponding to the value $\left(p \cdot \binom{m}{4}\right) \bmod (10^9 + 7)$, where p indicates the probability which you are asked to calculate.

Example

standard input	standard output
2 4 4 1 2 2 3 3 4 4 1 4 6 1 2 1 3 1 4 2 3 2 4 3 4	1 15