Ineffable Cycle

Input file:	`standard input`
Output file:	`standard output`
Time limit:	3 seconds
Memory limit:	1024 megabytes

撕掉标准人生的地图
就当我偏偏最喜欢迷路

The background story in the Chinese statements is removed due to the translation difficulties. >_<

Little Cyan Fish falls into a dream. It seems to see its future life trajectory, represented as a simple undirected graph with n vertices and m edges. This graph has too many edges, too complex a structure, and too many cycles.

Little Cyan Fish decides to choose two vertices i and j, such that after removing these two vertices from the graph, the entire graph has no cycles.

The Little Cyan Fish is curious about how many ways there are to choose such a pair of vertices (i, j) $(1 \le i < j \le n)$.

Input

Each test case contains multiple sets of test data. The first line of input contains an integer T $(1 \le T \le 2 \times 10^5)$, indicating the number of test data sets. For each set of test data:

- The first line contains two integers n, m $(3 \le n \le 5 \times 10^5, 0 \le m \le \min(\frac{n(n-1)}{2}, 5 \times 10^5))$, representing the number of vertices and edges.
- The next m lines each contain two integers u, v $(1 \le u, v \le n, u \ne v)$, representing an undirected edge. It is guaranteed that there are no multiple edges or self-loops in the graph.

It is guaranteed that the sum of n across all test data does not exceed 5×10^5, and the sum of m does not exceed 5×10^5.

Output

For each set of test data, output a single line containing an integer, representing the answer.

Example

standard input	standard output
3 7 7 1 2 2 3 3 4 4 5 5 1 4 6 6 7 8 9 1 2 2 3 3 4 1 5 5 6 6 4 1 7 7 8 8 4 7 8 1 2 2 3 3 4 4 1 4 5 5 6 6 7 7 4	20 25 15