

## C. Triangles

time limit per test: 2 seconds  
memory limit per test: 256 megabytes  
input: standard input  
output: standard output

Alice and Bob don't play games anymore. Now they study properties of all sorts of graphs together. Alice invented the following task: she takes a complete undirected graph with  $n$  vertices, chooses some  $m$  edges and keeps them. Bob gets the remaining edges.

Alice and Bob are fond of "triangles" in graphs, that is, cycles of length 3. That's why they wonder: what total number of triangles is there in the two graphs formed by Alice and Bob's edges, correspondingly?

### Input

The first line contains two space-separated integers  $n$  and  $m$  ( $1 \leq n \leq 10^6$ ,  $0 \leq m \leq 10^6$ ) — the number of vertices in the initial complete graph and the number of edges in Alice's graph, correspondingly. Then  $m$  lines follow: the  $i$ -th line contains two space-separated integers  $a_i, b_i$  ( $1 \leq a_i, b_i \leq n$ ,  $a_i \neq b_i$ ), — the numbers of the two vertices connected by the  $i$ -th edge in Alice's graph. It is guaranteed that Alice's graph contains no multiple edges and self-loops. It is guaranteed that the initial complete graph also contains no multiple edges and self-loops.

Consider the graph vertices to be indexed in some way from 1 to  $n$ .

### Output

Print a single number — the total number of cycles of length 3 in Alice and Bob's graphs together.

Please, do not use the `%lld` specifier to read or write 64-bit integers in C++. It is advised to use the `cin`, `cout` streams or the `%I64d` specifier.

### Examples

input
5 5 1 2 1 3 2 3 2 4 3 4
output
3

input
5 3 1 2 2 3 1 3
output
4

### Note

In the first sample Alice has 2 triangles: (1, 2, 3) and (2, 3, 4). Bob's graph has only 1 triangle : (1, 4, 5). That's why the two graphs in total contain 3 triangles.

In the second sample Alice's graph has only one triangle: (1, 2, 3). Bob's graph has three triangles: (1, 4, 5), (2, 4, 5) and (3, 4, 5). In this case the answer to the problem is 4.