

Contest Duration: 2025-04-19(Sat) 22:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250419T2100&p1=248>) - 2025-04-19(Sat) 23:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250419T2240&p1=248>) (local time) (100 minutes)

iso=20250419T2100&p1=248) - 2025-04-19(Sat) 23:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250419T2240&p1=248>) (local time) (100 minutes)

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## D - Line Crossing

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Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 400 points

### Problem Statement

There are  $N$  equally spaced points on a circle labeled clockwise as  $1, 2, \dots, N$ .

There are  $M$  distinct **lines**, where the  $i$ -th line passes through two distinct points  $A_i$  and  $B_i$  ( $1 \leq i \leq M$ ).

Find the number of pairs  $(i, j)$  satisfying:

- $1 \leq i < j \leq M$ , and
- the  $i$ -th and  $j$ -th lines intersect.

### Constraints

- $2 \leq N \leq 10^6$
- $1 \leq M \leq 3 \times 10^5$
- $1 \leq A_i < B_i \leq N$  ( $1 \leq i \leq M$ )
- $(A_i, B_i) \neq (A_j, B_j)$  ( $i \neq j$ )
- All input values are integers.

### Input

The input is given from Standard Input in the following format:

2026-01-02 (Fri)

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$N \quad M$   
 $A_1 \quad B_1$   
 $A_2 \quad B_2$   
 $\vdots$   
 $A_M \quad B_M$

## Output

Print the answer.

### Sample Input 1

Copy

```
8 3
1 5
1 8
2 4
```

Copy

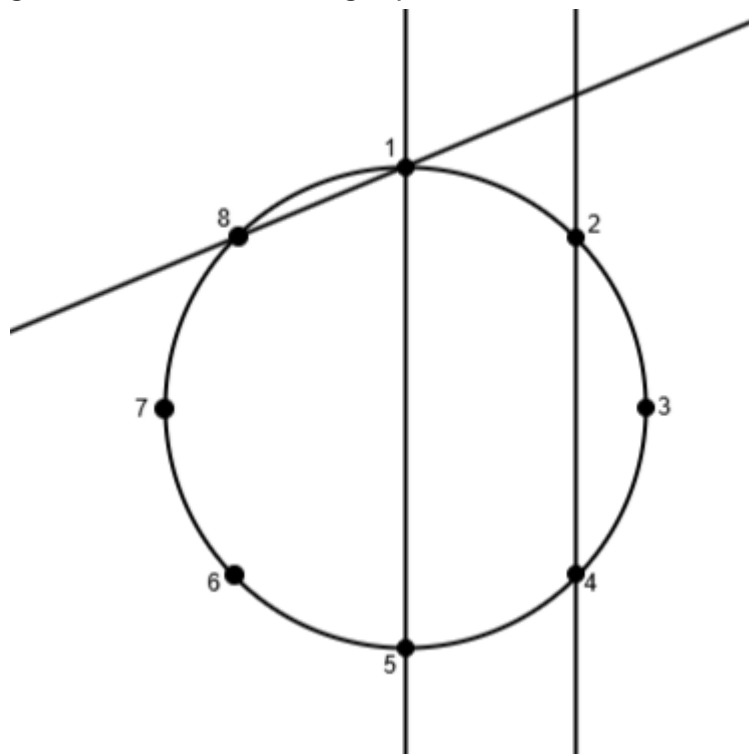
### Sample Output 1

Copy

```
2
```

Copy

As shown in the diagram below, there are eight points and three lines on the circle.



The 1st and 2nd lines intersect. The 1st and 3rd lines do not intersect. The 2nd and 3rd lines intersect. Since the pairs  $(i, j) = (1, 2), (2, 3)$  satisfy the conditions, print 2.

## Sample Input 2

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```
5 10
2 5
1 5
1 2
2 4
2 3
1 3
1 4
3 5
3 4
4 5
```

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## Sample Output 2

[Copy](#)

```
40
```

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#telegram)

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