Insidemen

Input file:	`standard input`
Output file:	`standard output`
Time limit:	3 seconds
Memory limit:	512 megabytes

There are N wizards arranged clockwise on the circular magic circle O, numbered from 1 to N according to their positions, and M magic links are drawn between their positions.

If two magic links (i, j) and (p, q) intersect and the intersection is located strictly inside the circle, then $w = (i + j)(p + q)$ gold coins are generated at the intersection. If one of the wizards among i, j, p, or q does not cast a spell, they cannot generate gold coins.

There are 2 insidemen who cannot cast spells among the N wizards. In the best case, how many gold coins can they get? (It is sure that the more coins, the better.)

Input

The first line contains two integers N and M.

The following M lines have two integers a and b in each line, indicating the magic link between wizard a and b.

It is guaranteed that $N \leq 10^3$, $M \leq 10^5$, and there are no repeated links.

Output

A single integer — the maximum possible number of gold coins generated.

Examples

standard input	standard output
6 7 6 4 4 1 4 5 2 1 1 5 5 2 2 3	70
10 30 4 5 8 4 10 3 8 3 6 5 7 9 8 5 2 7 9 10 3 4 1 10 1 9 6 3 5 7 10 8 5 9 5 10 1 6 2 1 1 5 2 5 3 1 9 3 3 5 7 1 6 7 10 7 6 8 6 10 9 6	8336