

Community

A community consists of N ($2 \leq N \leq 16$) people, numbered from 1 to N will choose K people. However, there are M ($1 \leq M \leq 120$) hate relation between a pair of people. Among those K people who are chosen, there must not be any two people that hates each other.

Count the maximum possible value of K , the maximum number of people that can be chosen.

Input

The first line consist of two integers N and M separated by a space.

The next M lines consist of two integers a and b each between 1 and N . These integers are guaranteed to be different. This means person a hates person b and vice versa.

Output

The maximum possible value of K

Example

Input:

5 2

1 2

2 3

Output:

4