Union–Find

Input

The first line of input consists of two integers N and Q, where $1 \leq N \leq 1\,000\,000$ is the number of elements in the base set and $0 \leq Q \leq 1\,000\,000$ is the number of operations. Then follow Q lines, one per operation. There are two types of operations:

- "`=` a b" indicate that the sets containing a and b are joined
- "`?` a b" is a query asking whether a and b belong to the same set

In both cases, a and b are distinct integers between 0 and $N-1$.

Output

For each query output a line containing "yes" if a and b are in the same set, and "no" otherwise.

Sample Input 1

```
10 4
? 1 3
= 1 8
= 3 8
? 1 3
```

Sample Output 1

```
no
yes
```

Sample Input 2

```
4 5
? 0 0
= 0 1
= 1 2
= 0 2
? 0 3
```

Sample Output 2

```
yes
no
```