A. Cloning Toys

Imp likes his plush toy a lot.

Recently, he found a machine that can clone plush toys. Imp knows that if he applies the machine to an original toy, he additionally gets one more original toy and one copy, and if he applies the machine to a copied toy, he gets two additional copies.

Initially, Imp has only one original toy. He wants to know if it is possible to use machine to get exactly x **copied** toys and y **original** toys? He can't throw toys away, and he can't apply the machine to a copy if he doesn't currently have any copies.

Input

The only line contains two integers x and y ($0 \leq x, y \leq 10^9$) — the number of copies and the number of original toys Imp wants to get (including the initial one).

Output

Print "Yes", if the desired configuration is possible, and "No" otherwise.

You can print each letter in arbitrary case (upper or lower).

Examples

input

```
6 3
```

output

```
Yes
```

input

```
4 2
```

output

```
No
```

input

```
1000 1001
```

output

```
Yes
```

Note

In the first example, Imp has to apply the machine twice to original toys and then twice to copies.