

## B. Maxim Buys an Apartment

time limit per test: 1 second

memory limit per test: 512 megabytes

input: standard input

output: standard output

Maxim wants to buy an apartment in a new house at Line Avenue of Metropolis. The house has  $n$  apartments that are numbered from 1 to  $n$  and are arranged in a row. Two apartments are adjacent if their indices differ by 1. Some of the apartments can already be inhabited, others are available for sale.

Maxim often visits his neighbors, so apartment is *good* for him if it is available for sale and there is at least one already inhabited apartment adjacent to it. Maxim knows that there are exactly  $k$  already inhabited apartments, but he doesn't know their indices yet.

Find out what could be the minimum possible and the maximum possible number of apartments that are good for Maxim.

### Input

The only line of the input contains two integers:  $n$  and  $k$  ( $1 \leq n \leq 10^9$ ,  $0 \leq k \leq n$ ).

### Output

Print the minimum possible and the maximum possible number of apartments good for Maxim.

### Example

input
6 3
output
1 3

### Note

In the sample test, the number of good apartments could be minimum possible if, for example, apartments with indices 1, 2 and 3 were inhabited. In this case only apartment 4 is good. The maximum possible number could be, for example, if apartments with indices 1, 3 and 5 were inhabited. In this case all other apartments: 2, 4 and 6 are good.