A. New Year Candles

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

Vasily the Programmer loves romance, so this year he decided to illuminate his room with candles.

Vasily has a candles. When Vasily lights up a new candle, it first burns for an hour and then it goes out. Vasily is smart, so he can make b went out candles into a new candle. As a result, this new candle can be used like any other new candle.

Now Vasily wonders: for how many hours can his candles light up the room if he acts optimally well? Help him find this number.

Input

The single line contains two integers, a and b ($1 \le a \le 1000$; $2 \le b \le 1000$).

Output

Print a single integer — the number of hours Vasily can light up the room for.

Examples

input
4 2

output
7

input
6 3

output
8

Note

Consider the first sample. For the first four hours Vasily lights up new candles, then he uses four burned out candles to make two new ones and lights them up. When these candles go out (stop burning), Vasily can make another candle. Overall, Vasily can light up the room for 7 hours.