

# Snowball Game

Farmer John's  $N$  ( $1 \leq N \leq 10^{18}$ ) cows went for a trip around the world. Now they are at the North Pole. They decided to play a snowball game. Each of the cows made one snowball. As it is known, heavier snowballs make more harm. FJ is sure that cows' snowballs are of the same weight except one snowball, which is heavier. FJ has one balance scale. With it he can know which of two snowball groups is heavier. Snowballs get damaged when weighed, so each snowball can take part in a weighing at most  $K$  ( $1 \leq K \leq 10000$ ) times. Help FJ find the minimal number of weighings after which he can find the heaviest snowball.

## Input

The only line of input file contains numbers  $N$  and  $K$ .

## Output

The only line of output file contains minimum number of weighings.

## Example

**Input:**

19 2

**Output:**

3