

## J Singing Low

After the work day is over at TJ IOI Inc., many of the employees attend office karaoke! One of these employees is Devon, who wants to see how low he can sing. Devon begins at note  $N$  ( $1 \leq N \leq 1,000,000$ ), and would like to sing note 0. In one step, Devon may sing between 1 and  $K$  notes lower than his current note. (For example, if  $K$  is 3 and he is on note 5, he can sing either 3, 2, or 1 notes lower than his current note, taking him to notes 2, 3, or 4, respectively.)

However, Devon's note cannot decrease by any given amount more than once. (For example, if he went from note 5 to note 3 in the previous example by going down 2 notes, he would not be able to go to 1 as this be another decrease by 2 notes.) Please help Devon calculate the smallest value of  $K$  that will allow him to get to note 0.

**SHORT NAME:** singing

**INPUT FORMAT:**

The first line will contain the integer  $N$ , the note that Devon begins on.

**OUTPUT FORMAT:**

The output should consist of one integer,  $K$ , the lowest value which will allow Devon to reach note 0.

**SAMPLE INPUT:**

8

**SAMPLE OUTPUT:**

4