

Greatest Divisor (Version 2)

Input file: standard input
Output file: standard output
Time limit: 1.5 seconds
Memory limit: 256 megabytes

The difference between this version and the first version of this problem is the range where n belongs to. This time n can be negative.

You are given an integer n , you have to find its greatest divisor that is **different than** n .

Input

A single line containing a positive integer $-10^5 \leq n \leq -2$ or $2 \leq n \leq 10^5$.

Output

The greatest divisor d of n , where $d \neq n$.

Example

standard input	standard output
20	10

Note

Divisors of 20 are 1, 2, 4, 5, 10, and 20 the greatest of them that is different than 20 is 10.