Michael Loves Math!

Michael is very interested in math and he is always thinking about numbers. His favourite part of math is prime factorization.

Prime factorization involves finding all numbers which multiply to a larger number using only prime numbers (e.g. $216 = 2^3 * 3^3$). He really wants to know what the largest prime factor is for numbers going up to 8 digits.

(hint: square root the initial number for efficiency and use % to check for factors).

Instructions

Problem

Given a positive integer n ($1 \leq n \leq 99999999$), print out the largest prime factor of n.

Input Specification

The first line will contain the positive integer n.

Output Specification

The output should be the largest prime factor of n.

Sample

2222

ans = 101