Sieve of Sundaram

In this problem you must implement <u>Sieve of Sundaram</u>, other solutions (algorithms) not acceptable.

Given one integer n, write prime numbers not greater than n in ascending order.

Input

One integer number2≤n≤100000.

Output

Print space separated prime numbers not greater than *n* in one line.

Example

Input:

iiipt _

Output:

2357

23/06/2019 - Time limit increased.