

Sieve Of Erasthathenes

Heard of a procedure called sieve of Eratosthenes? Well, implement this:

- 1). Fill an array num[n] (where $0 \leq n \leq 1000$) with numbers from 1 to n.
- 2). Starting with the second entry in the array, set all its multiples to zero.
- 3). Proceed to the next non-zero element and set all its multiples to zero.
- 4). Repeat step 3 till u have set up the multiples of all the non-zero elements to zero.
- 5). At the conclusion of step 4, all the non-zero entries left in the array would be.....(obviously) prime numbers, so print out these numbers.

Input

First line consists of number of test cases t($0 \leq t \leq 100$). The next lines refers to the values of n($0 \leq n \leq 1000$).

Output

The number of prime numbers upto n with output of each test case separated by a extra line.

Example

Input:

2
5
10

Output:

1
2
3
5

1
2
3
5
7