

Easy

Given an array `arr[]` of size  $N-1$  with integers in the range of  $[1, N]$ , the task is to find the missing number from the first  $N$  integers.

**Note:** There are no duplicates in the list.

**Examples:**

**Input:** `arr[] = {1, 2, 4, 6, 3, 7, 8}`

**Output:** 5

$arr[N-1]$   
 $[1 \dots N]$

How to take input without knowing the size

$N-1 = 7$   
 $N = 8$   
 $1-8$   
 $3$

$N \rightarrow [N-1]$   
 1 value will left behind  
 $(1, 2, 4, 6, 3, 7, 8)$   
 $N-1 = 7$   
 $N = 8$   
 $[1-8]$

→ (add all the element of the array)

→ (add the elements in the range  $[1-N]$ )

sum of  $N$  natural no.  
 $\frac{n(n+1)}{2}$

Easy-Medium

Given a number  $n$ , print all primes smaller than or equal to  $n$ . It is also given that  $n$  is a small number.

**Example:**

**Input :**  $n=10$

**Output :** 2 3 5 7 2 3 5 7

**Input :**  $n=20$

**Output:** 2 3 5 7 11 13 17 19

which is divisible by 1

and itself.

2 3 5 7 11 →

$n=10$

Sieve

if  $X$  is a prime no. then all its multiple will be non prime

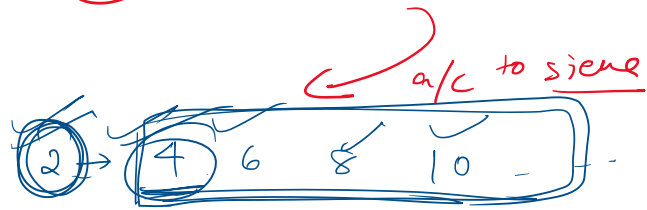
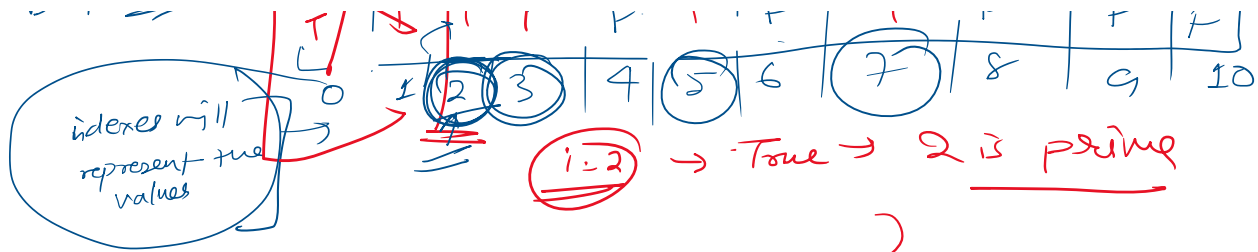
$2 \times 2$   
 $2 \times 3$   
 $2 \times 4$   
 $2 \times 5$   
 $2 \times 6$   
 $2 \times 7$   
 $2 \times 8$   
 $2 \times 9$   
 $2 \times 10$

$2 \rightarrow 4, 6, 8, 10$   
 $3 \rightarrow 6, 9, 12$   
 $5 \rightarrow 10, 15, 20, 25$

→ prime

$n=10$   
 $bool$   
 $arr[n+1]$   

T	F	T	F	F	T	F	T	F	F
0	1	2	3	4	5	6	7	8	9



3 → True → 3 is prime

3 → 6 9 12 - -

5 → 10 15 - -

7 → 14 21 - -