min no. of Platform

	0	1	2	3	4	5
arr:	900	940	950	1100	1500	1800
dep:	910	1200	1120	1130	1900	2000

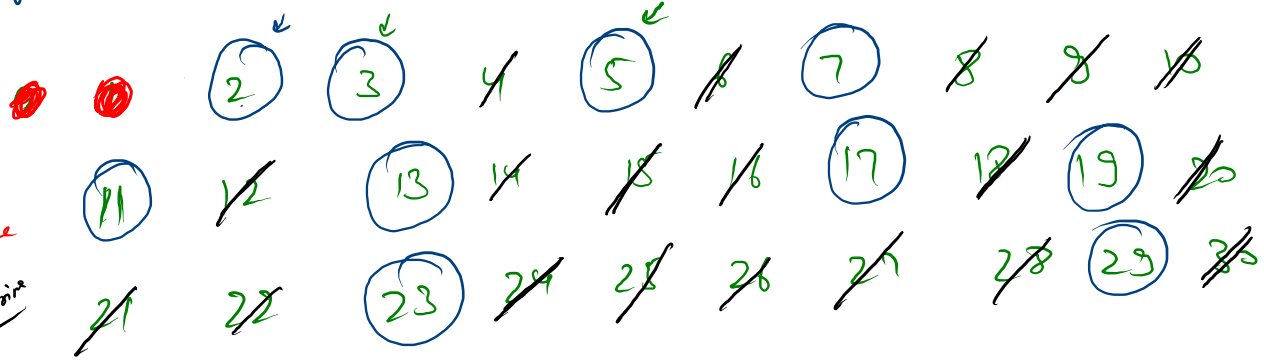
arr:	900	940	950	1100	1500	1800
dep:	910	1120	1130	1200	1900	2000

Sieve of eratosthenes → all Primes upto n

n = 30

false ⇒ Prime

true ⇒ non-Prime



10^8

$$\frac{N}{2} + \frac{N}{3} + \frac{N}{5} + \cdots$$

$$N\left(\frac{1}{2} + \frac{1}{3} + \frac{1}{5} + \cdots\right)$$

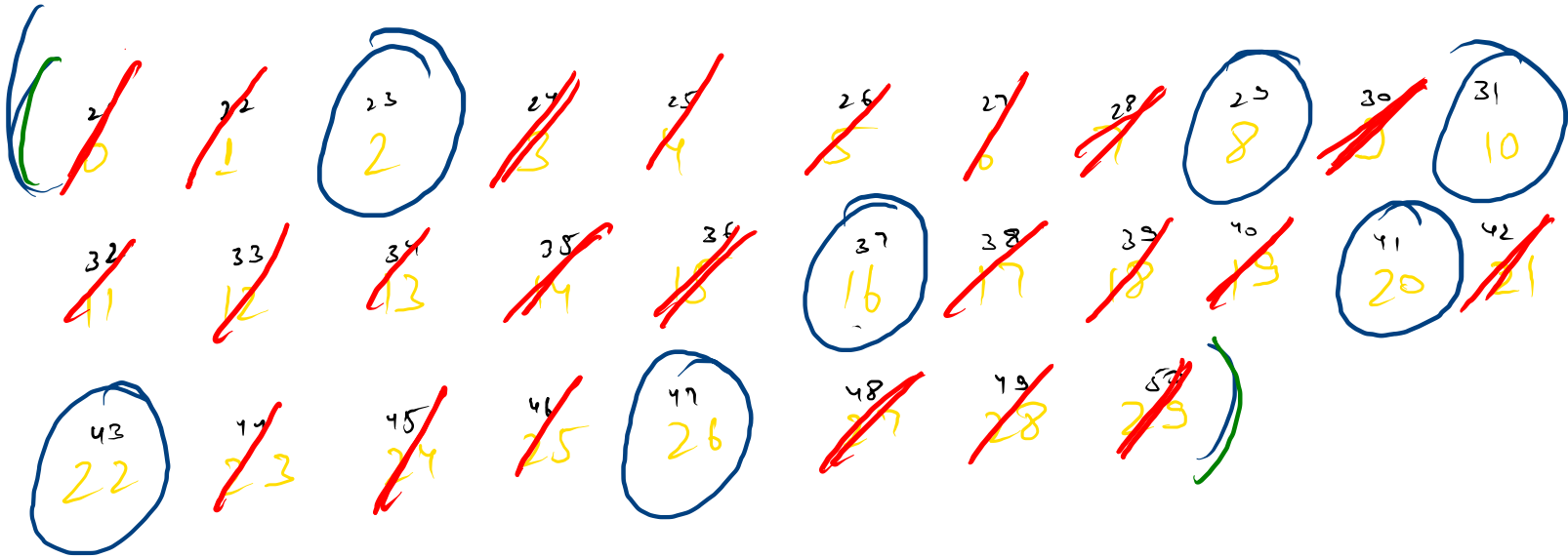
$O(N \log\log N) \simeq O(N)$

$\log_2 \log_2 2^{26} \Rightarrow \log 26 \Rightarrow \log 2^6 \Rightarrow 6$

Segmented Sieve

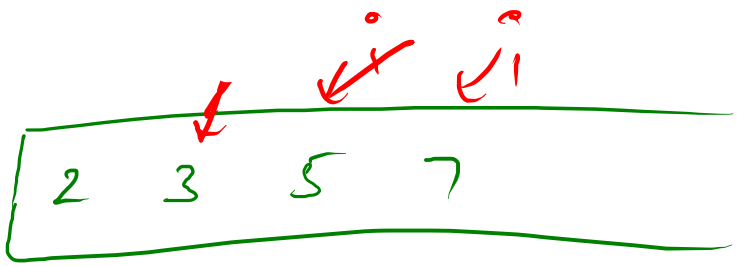
m = 21

n = 50



$\sqrt{n}$

1



Two Sum

1 4 45 6 10 -8 tar = 16

sort

-8 1 4 6 10 45

i j

arr[i] + arr[j] = tar

i++ ← arr[i] + arr[j] < tar

j-- ← arr[i] + arr[j] > tar

Two diff-

5 20 3 2 50 80 tar: 15

O(nlogn) + O(n)

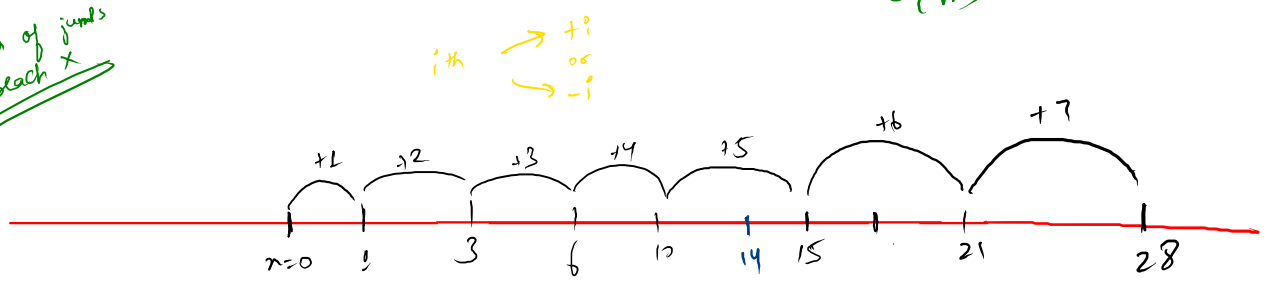
2 3 5 20 50 80

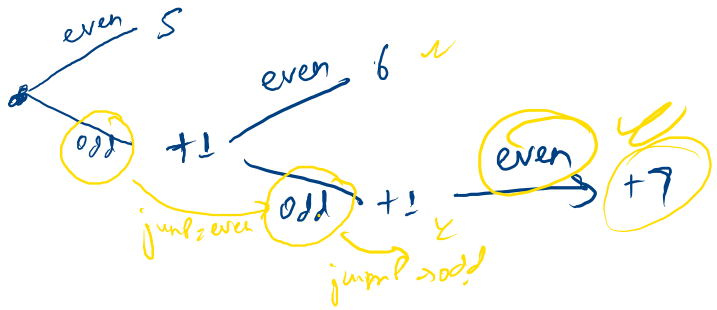
i j

```
arr[j] - arr[i] == tar
j++ <- arr[j] - arr[i] < tar
i++ <- arr[j] - arr[i] > tar
```

$O(\sqrt{n})$

number of jumps to reach x





$\Rightarrow \quad 1 + 2 + 3 + 4 + 5 + 6 = 21$

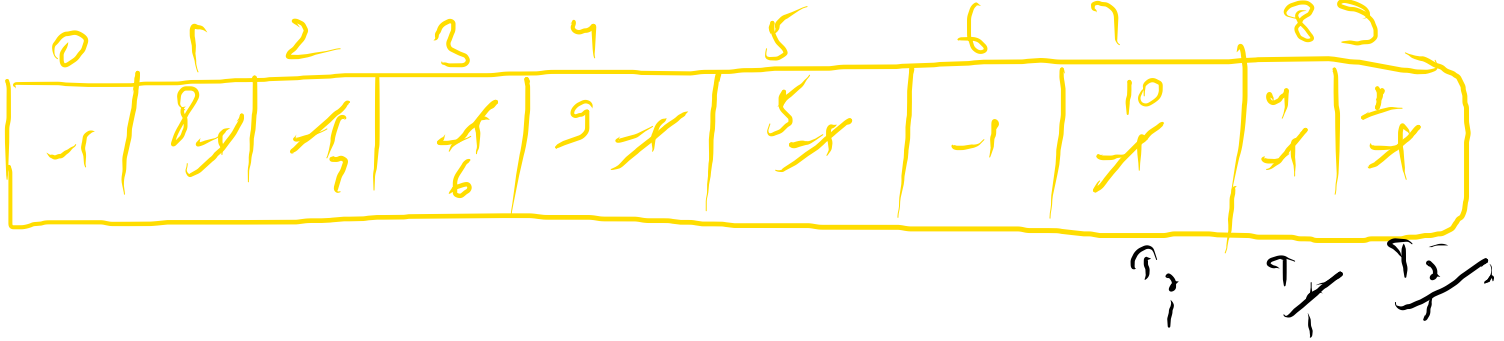
$21 - 3 = 18$

$1 + 2 - 3 + 4 + 5 + 6 = 21 - (2+3) = 15$

even reduction

max swap

0	1	2	3	4	5	6	7	8	9	10
9	9	8	8	8	5	3	2	1	4	7



$O(10+n) \simeq O(n)$

$O(10) \simeq O(1)$