

Q Capacity to ship packages within D days.

5 Days

$$1, 2, \dots \rightarrow \frac{10 \times 5}{2} = 55$$



Range $\rightarrow 0 \rightarrow 55$

Range for ans is monotonic in nature.

(Binary search)

mid

for mid capacity of ship, is it possible to ship all packages

If mid $\checkmark \checkmark$

go left

mid $\times \times$

go right

Q Patching Array

arr $\rightarrow [1, 3]$, $n = 6$

[1, 2, 3]

1 \rightarrow 1 \checkmark
2 \rightarrow 2 \checkmark
3 \rightarrow 3 \checkmark
1+3 \rightarrow 4 \checkmark
2+3 \rightarrow 5 \checkmark
1+2+3 \rightarrow 6 \checkmark

pay $\rightarrow x$ suprees

$\frac{x}{2} + \frac{x}{2}$
 $\frac{x}{3} + \frac{x}{3} + \frac{x}{3}$

5

m \rightarrow smallest missing number

[2, 5, 6]
m

[1, m]

[1, m] already covered

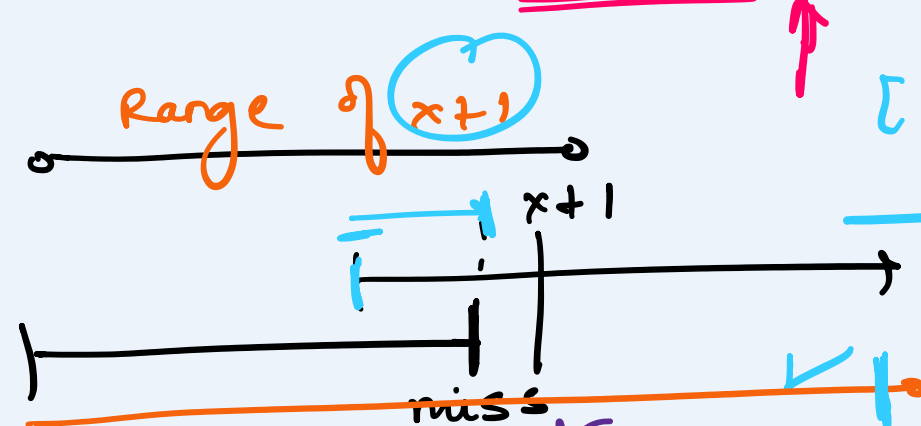
(7, 9)

1+6 \rightarrow 7
2+6 \rightarrow 8
3+6 \rightarrow 9

[1, 2, 3, 8] $n = 16$

[1, 6] [8, 14] \rightarrow covered

missing \rightarrow 7, 15, 16
m



[1, miss]

[1+x, x+miss]

$x \leq \text{miss}$

[1, x+miss]

$x = \text{miss}$

[1, 2, 3, 8]
[1, 4]
[1+3, 4+3]
[4, 7]
[4+8, 7+8]
(12, 15)

$n = 80$
1 \rightarrow 80

[1, 1]
[1, 2]
[1, 4]
[1, 14]

[1, 2, 3]

Q Max difference you can get from changing an integer.

num = 555
output = 888

1 $x = 5$ $y = 9$
 $a = \text{num} = 999$

2 $x = 9$ $y = 1$
 $b = \text{num} = 111$

a - b
999 \rightarrow 111 \rightarrow 888

a - b

9993456