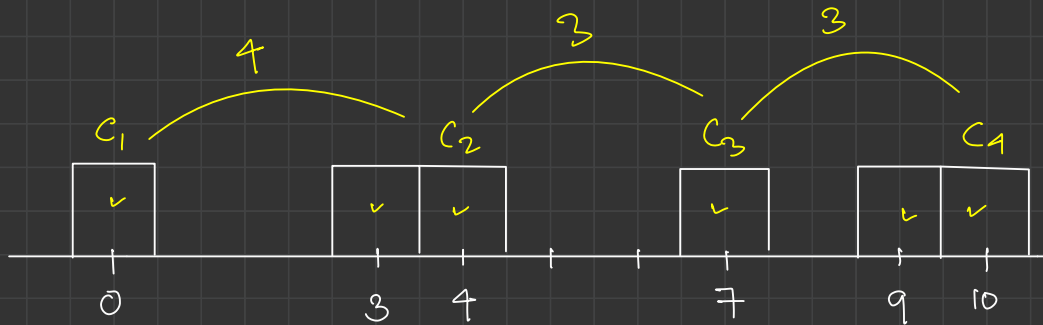




Aggressive Cows

$$\text{pos}[] = \{0, 3, 4, 7, 9, 10\}$$

$$\text{cows} = 4 \checkmark \checkmark \checkmark$$

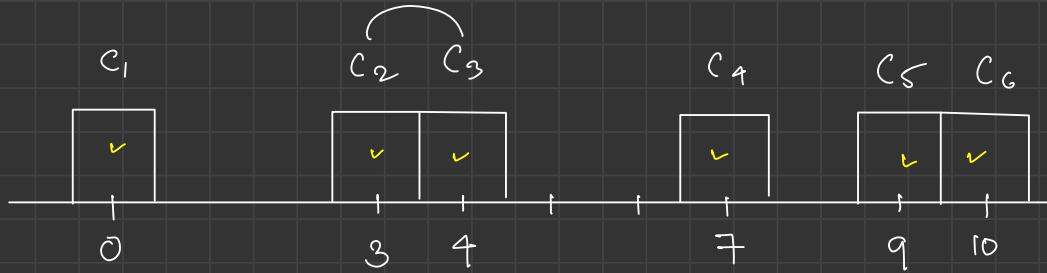


$$\boxed{3} \checkmark$$

$$\boxed{{}^6C_4} \rightarrow \text{ways}$$

$$\checkmark \text{pos}[] = \{0, 3, 4, 7, 9, 10\}$$

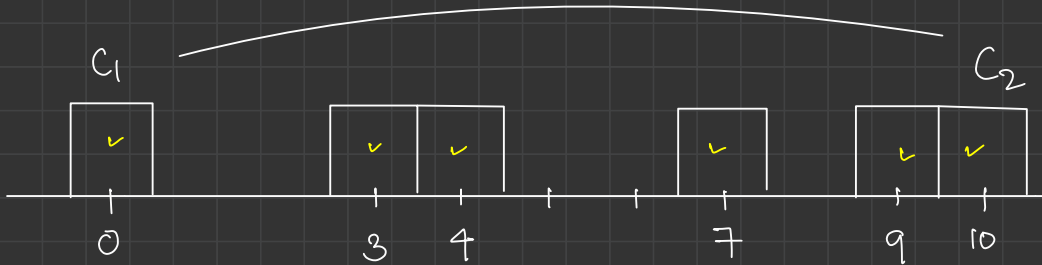
$$\text{cows} = 6$$



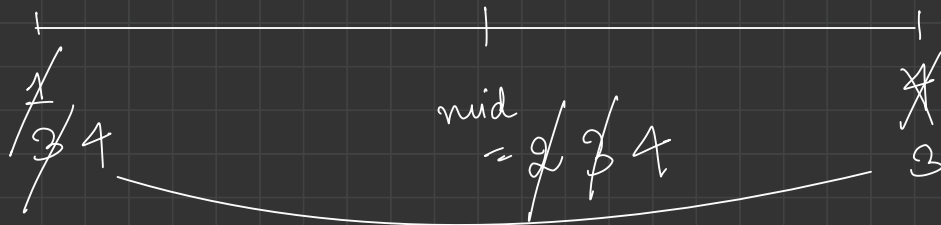
dist
① ✓

$$\checkmark \text{pos}[] = \{0, 3, 4, 7, 9, 10\}$$

$$\text{cows} = 2$$



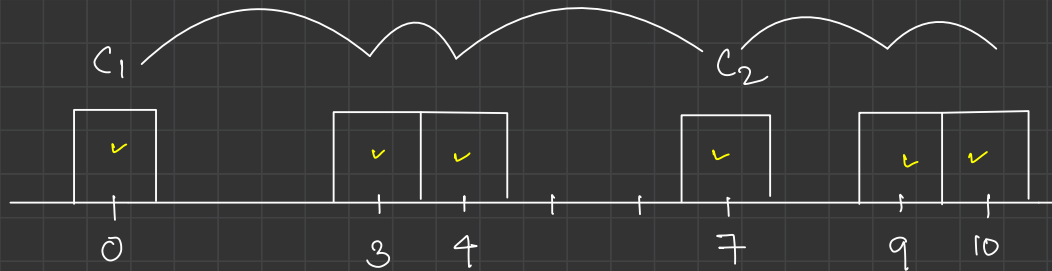
dist
⑩ ✓



$$\text{pairs} = \frac{10-1}{2} = 4.5$$

$$\text{pos}[] = \{0, 3, 4, 7, 9, 10\}$$

$$\text{dist} = 5 \checkmark$$



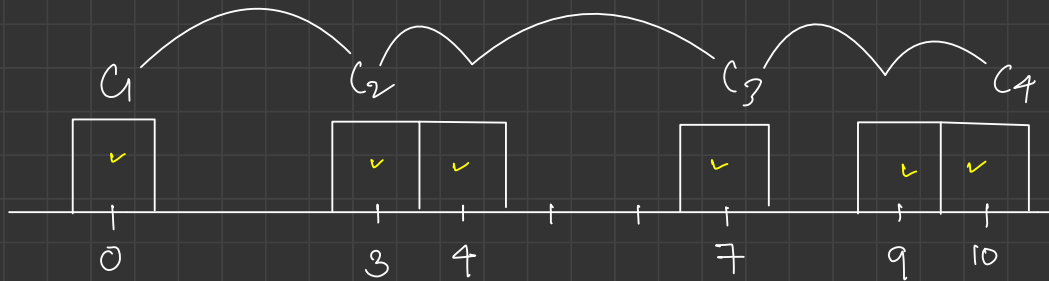
$$\text{pos}[] = \{ 0, 3, 4, 7, 9, 10 \}$$

$$\text{dist} = 2$$

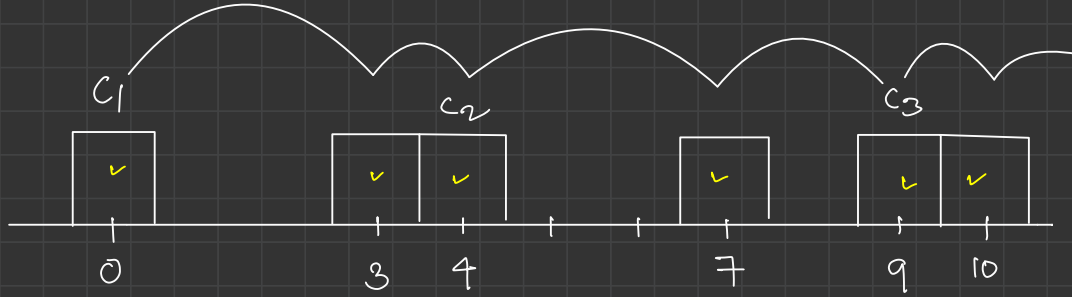


$$\text{pos}[] = \{ 0, 3, 4, 7, 9, 10 \}$$

$$\text{dist} = 3$$

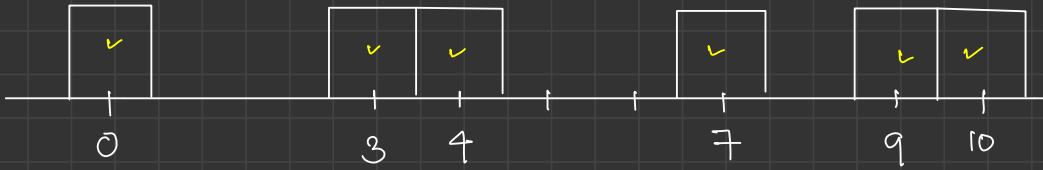


$\text{pos}[] = \{ 0, 3, 4, 7, 9, 10 \}$ $\text{list} = 4$



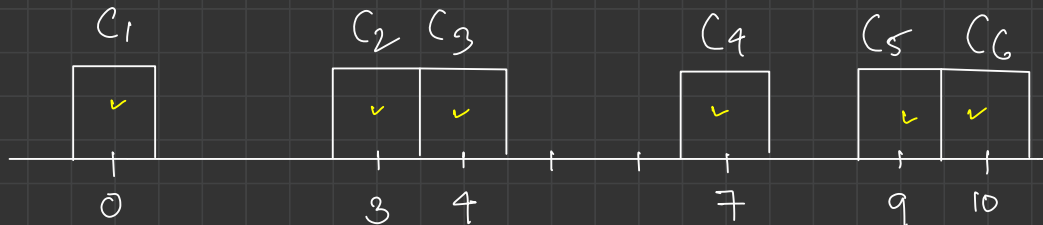
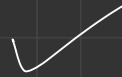
$$\text{pos}[] = \{0, 3, 4, 7, 9, 10\}$$

$$\text{cows} = 3$$



$$\text{pos}[] = \{0, 3, 4, 7, 9, 10\}$$

$$\text{cows} = 6$$



1 dist → ans

$$\text{pos}[] = \{0, 3, 4, 7, 9, 10\}$$

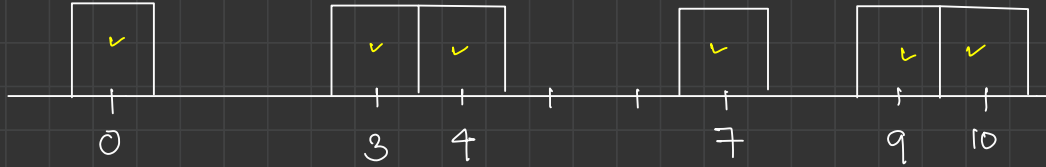
$$\text{cows} = 2$$



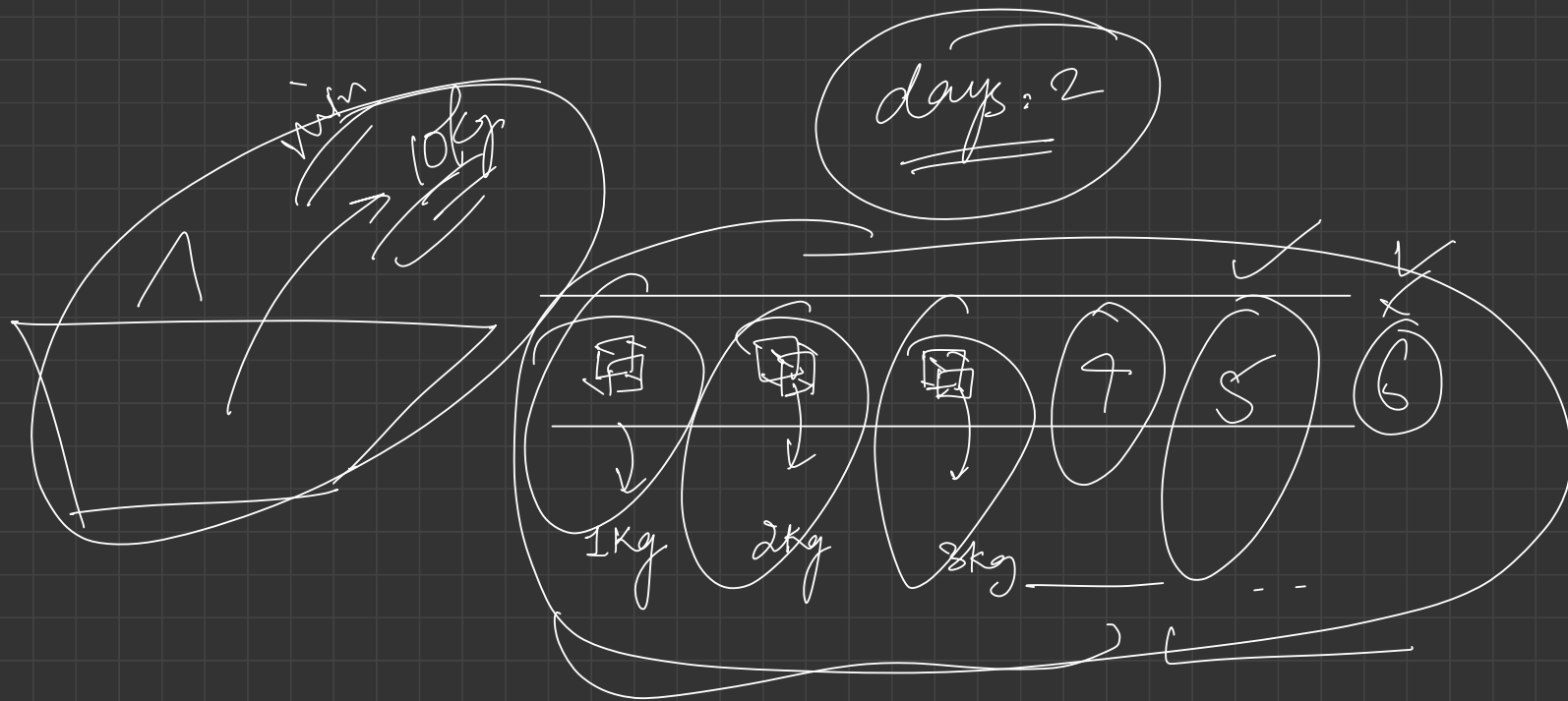
ans = 10

$\text{pos}[] = \{0, 3, 4, 7, 9, 10\}$

$\text{cows} = 3$



Capacity to ship package with B days.



$$A[] = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$$

$$\text{days} = 5$$

$$\text{days} = 1$$

$$\text{capacity} = 55 \text{ kg}$$

$$\text{days} = 10$$

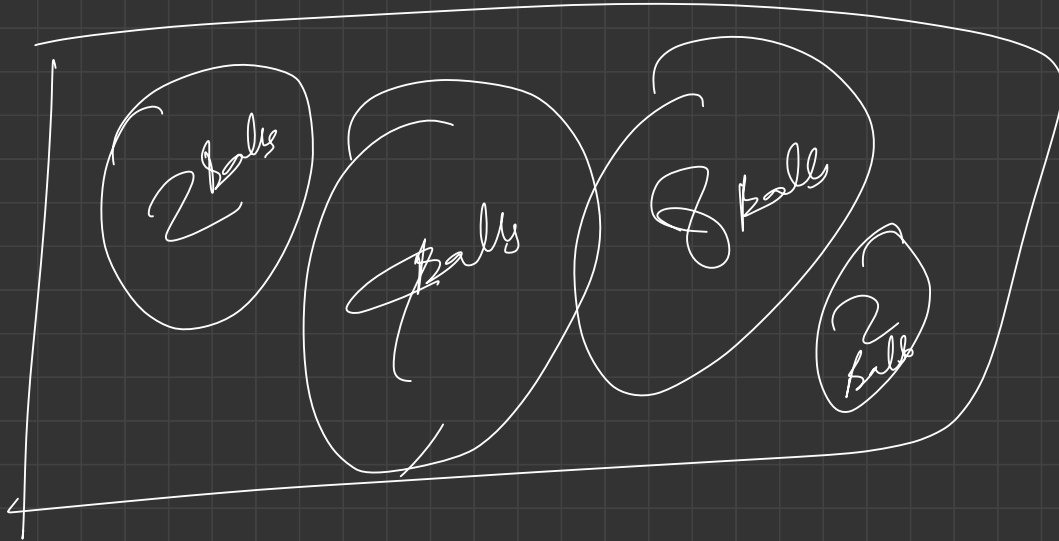
$$\text{capacity} = 10 \text{ kg}$$

ans lies in this range

↳ minimise ans

Minimum limit of balls in a bag

$(1,7) (2,6) (3,5) (4,4)$
↑
 $arr[] = \{2, 4, 8, 2\}$ $maxOpt = 4$



arr[]: {2, 4, 8, 2}

maxOpt = 4

①

→ (2, 2) | 1, 3 ✓

{2, 1, 3, 8, 2}

②

→ (1, 7), (2, 6), (3, 5), (4, 4) ✓

{2, 1, 3, 2, 6, 2}

③

→ (1, 5), (2, 4), (3, 3) ✓

{2, 1, 3, 2, 3, 3, 2}

④

→ (1, 2) ✓

✓✓ {2, 1, 3, 2, 3, 1, 2, 2}

3

max packet

arr[]: {2, 4, 8, 2} if opt = ∞

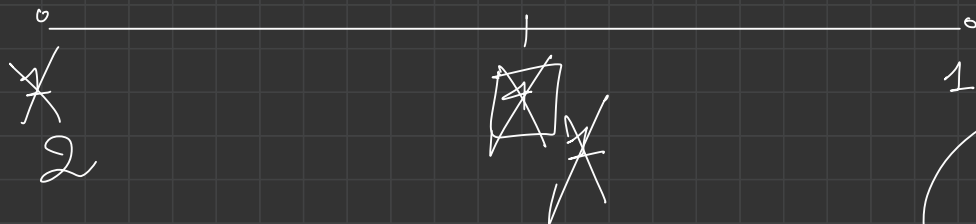
\rightarrow {1, 1, 1, ...}

penalty = 1

arr[]: {2, 4, 8, 2}

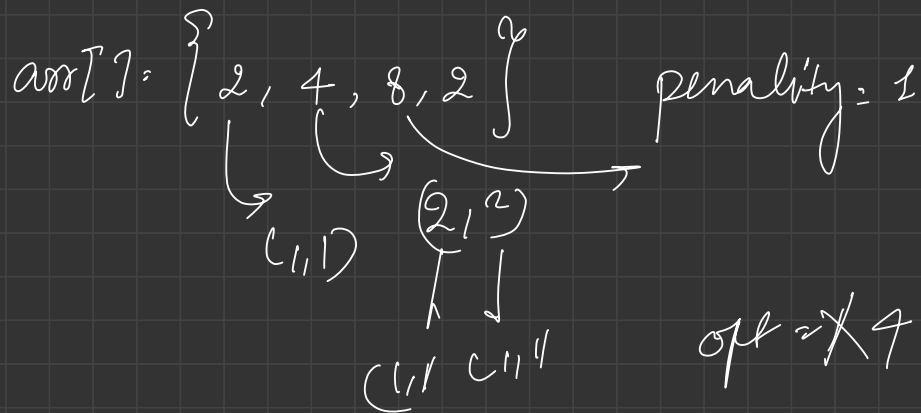
if opt = 0

penalty = 8



$$\text{maxOpt} = 4$$

$$\text{pairs} = \cancel{2}$$



$$\text{arr}[1] = \{7, 5, 3\}$$

$$\text{maxOpt} = 3$$

Case 1

$$\text{arr}[1] = \{7, 5, 3\} \quad \text{maxOpt} = \infty$$

eventually $\rightarrow \{1, 1, 1, 1, 1, 1, 1, 1, 1, 1\} \rightarrow \text{penalty} = 1$

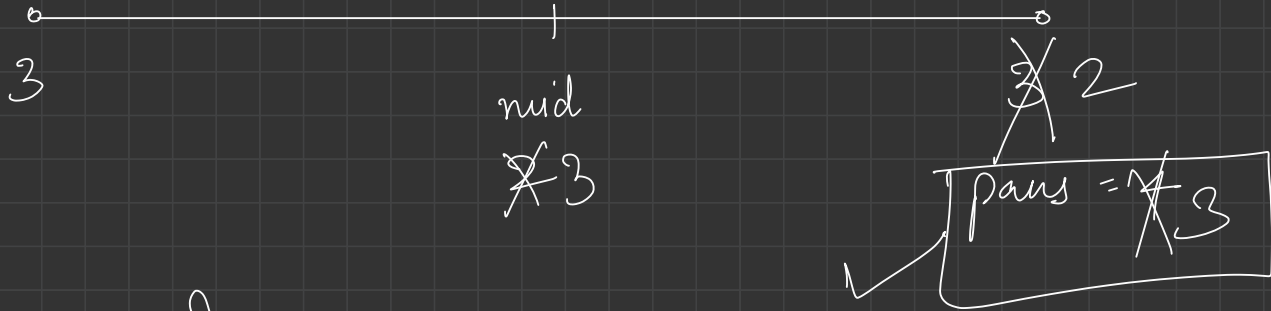
Case 2

$$\text{arr}[1] = \{7, 5, 3\} \quad \text{maxOpt} = 0$$

penalty $\rightarrow (7)$

arr[]: { 7, 5, 3 }

maxOpt = 3

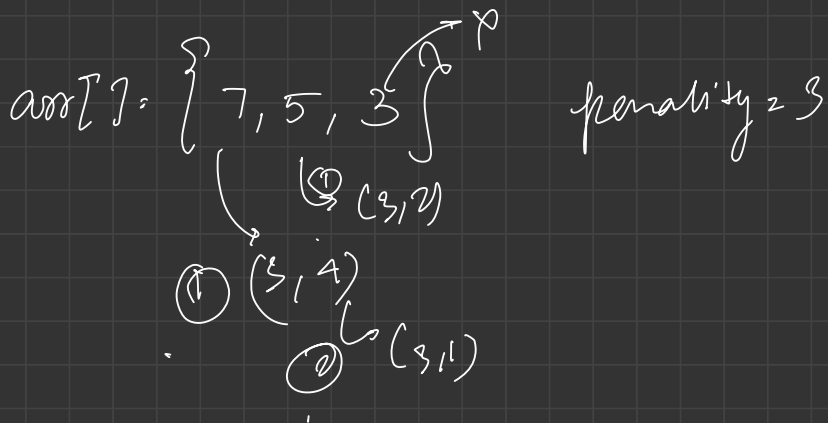
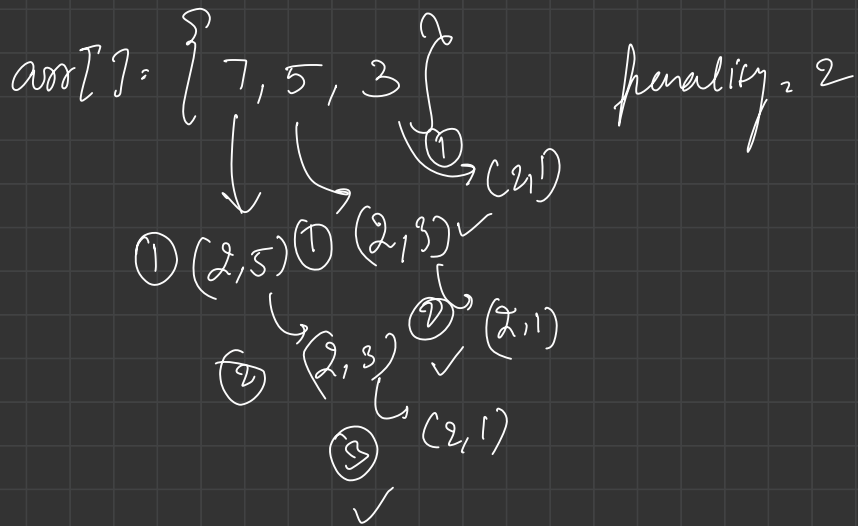


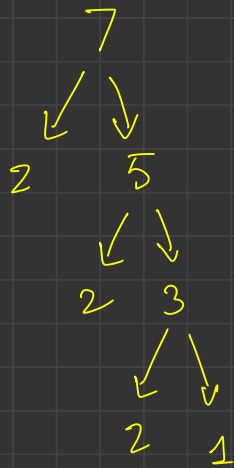
arr[]: { 7, 5, 3 }

Arrows point from the 7 and 5 to (3, 4) and from the 5 and 3 to (1, 4). A large 'X' is written next to the second arrow.

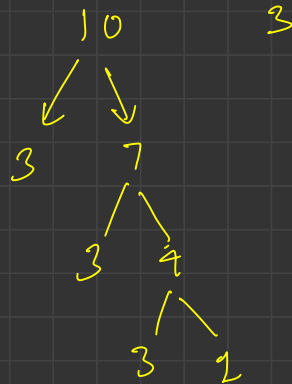
parity = 4

opt = 2



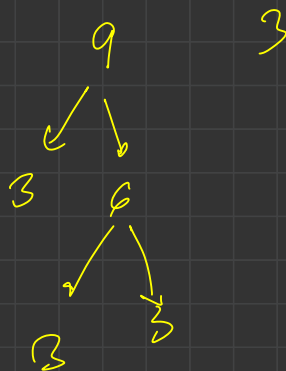
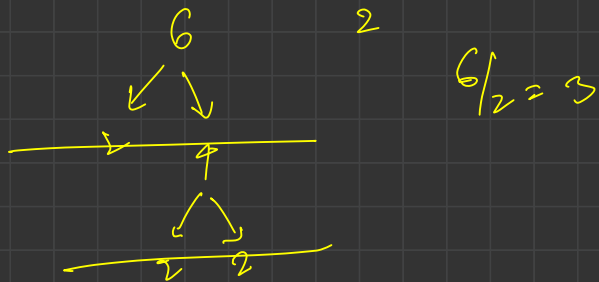


$$\boxed{7/2} \leftarrow 3$$



3

$$\boxed{10/3 = 3}$$



$$\left\{ \begin{array}{l} x \% p = -0, \text{ opt} = x/p - 1 \\ x \% p \neq 0, \text{ opt} = x/p \end{array} \right.$$

