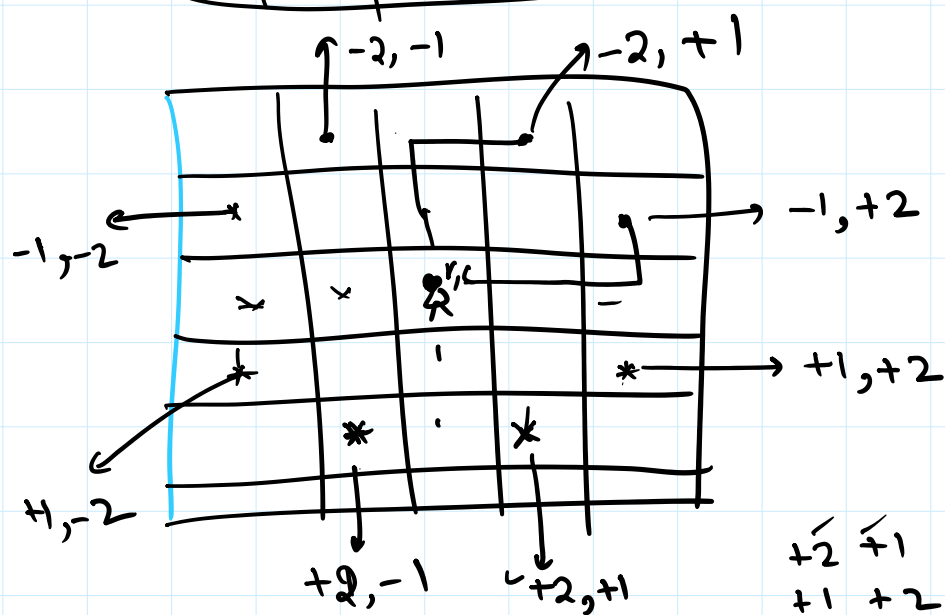
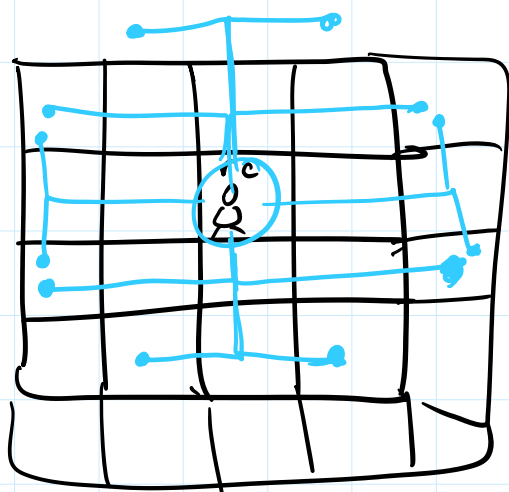
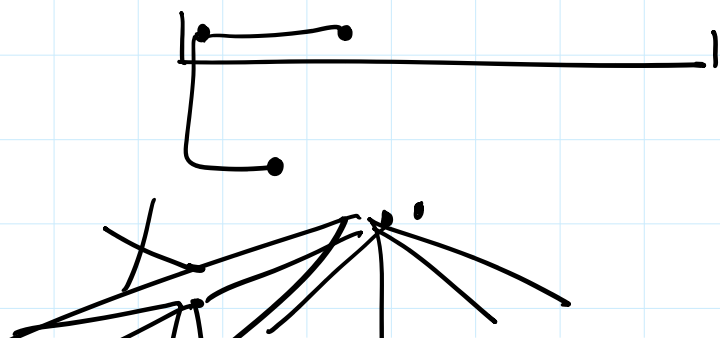
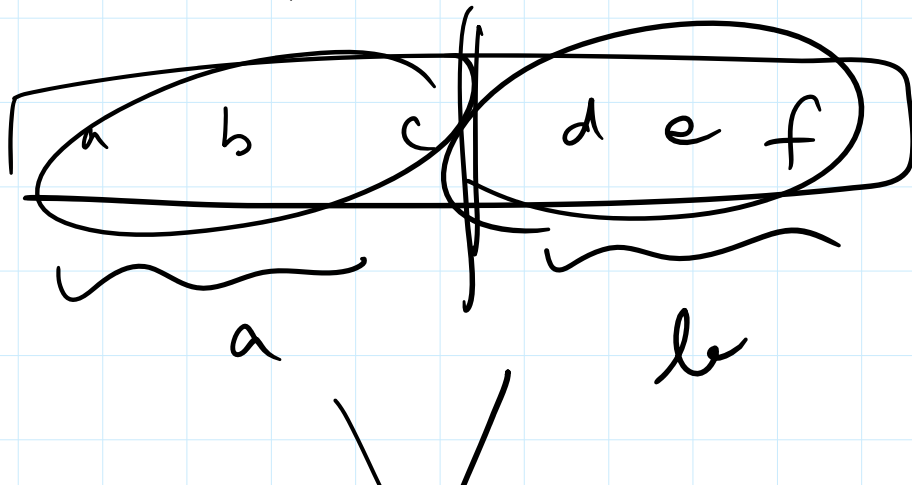
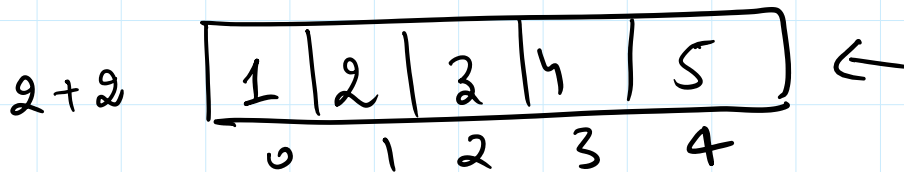
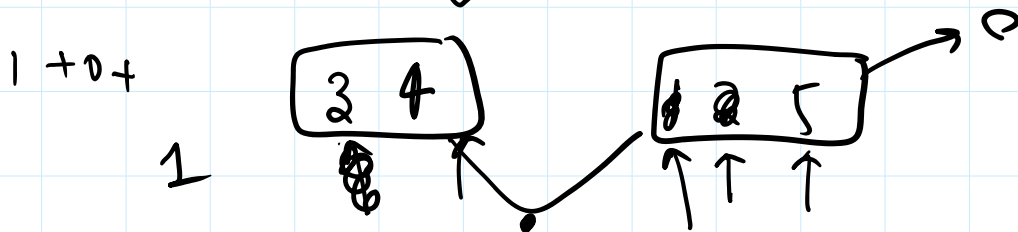
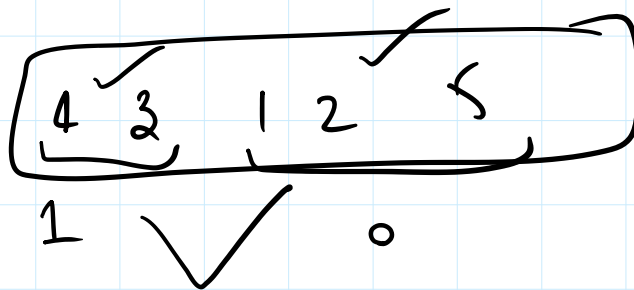

$$\underline{8 \times 8}$$

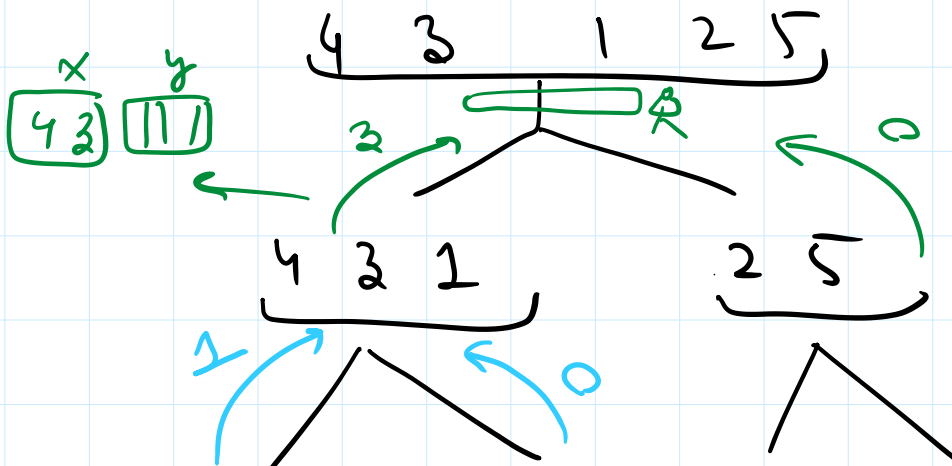
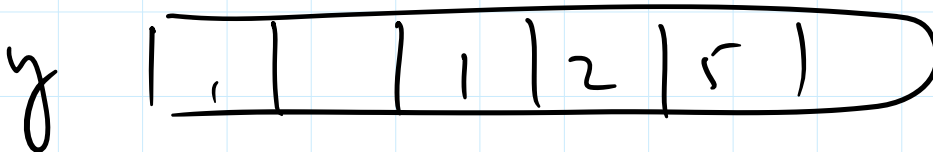
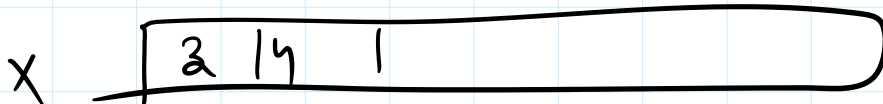
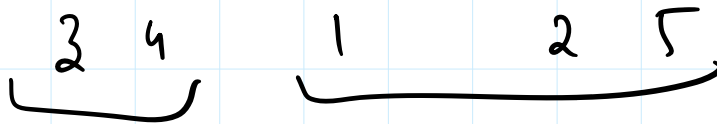
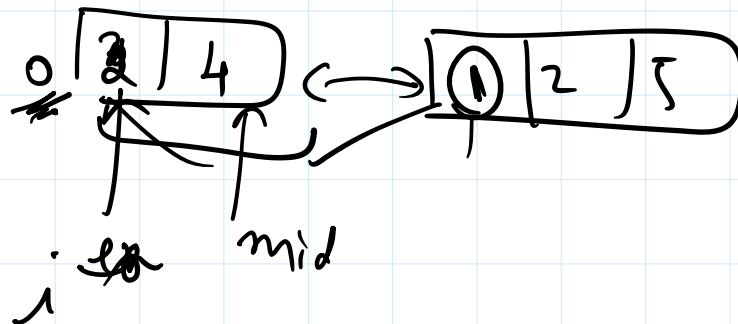
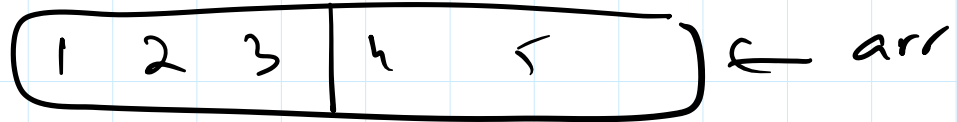
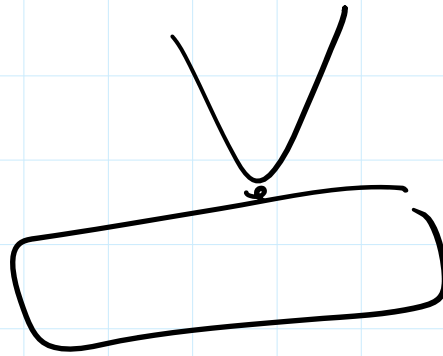
20	5	2
3	0	7
6	2	4

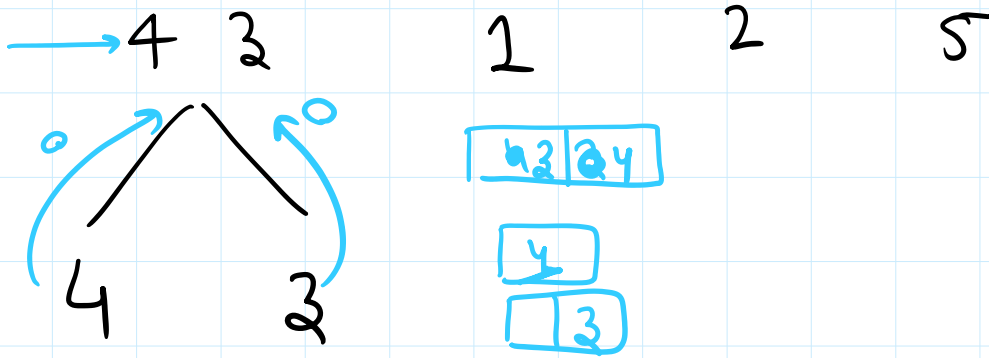

$$\begin{array}{cccccccc} +2 & -1 & -1 & -2 & -2 & -1 & +1 & +2 \\ +1 & +2 & +2 & +1 & -1 & -2 & -2 & -1 \end{array}$$




4 3 1 2 5
 4 1 ~~3~~
 4 2
 + 3
 3 1
 3 2







$$T(n) = T(n/2) + T(n/2) + n$$

$$\begin{aligned} T(n) &= 2T(n/2) + n \\ T(n/2) &= 2T(n/4) + n/2 \end{aligned}$$

$$\begin{aligned} T(n) &= 2[2T(n/4) + n/2] + n \\ &= 4T(n/4) + 2(n/2) + n \end{aligned}$$

$$T(n) = 4T(n/4) + 2n$$

After k iter

$$= 2^k T(n/2^k) + kn$$

$$\frac{n}{2^k} = 1$$

$$k = \log_2 n$$

$$= 2^{\log_2 n} T(1) + n(\log_2 n)$$

$$= 2^{\log_2 n} T(1) + n(\log_2 n)$$

$$= \boxed{n + n \log_2 n}$$

↓
1 3 5 7 8 10

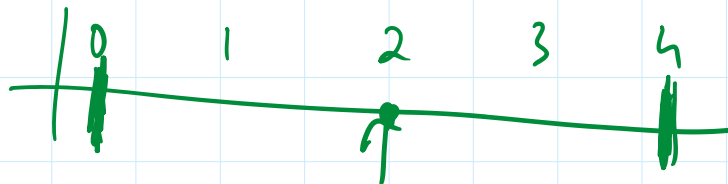
8

1 2 2 2 2 3 3 3

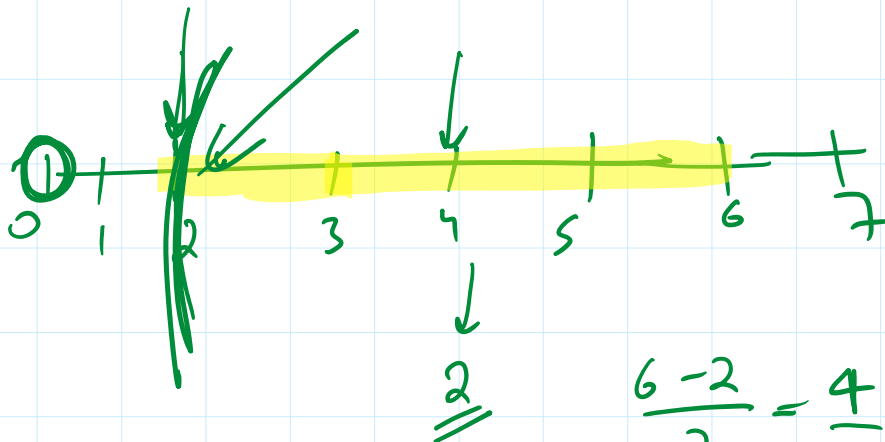
lower bound
upper bound

8 4 3 7

2



$$\left(\frac{4 - 0}{2} \right)^{1/2} = 2$$



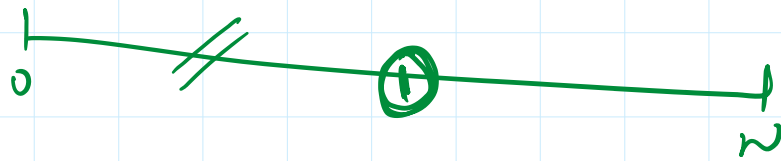
$$\frac{6 - 2}{2} = \frac{4}{2} = \underline{\underline{2}}$$

100 9

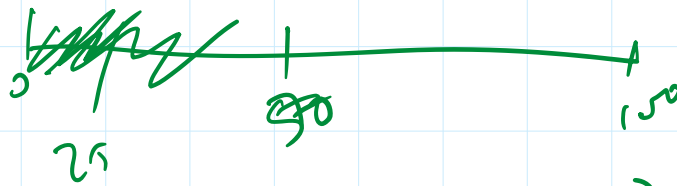
1 x 2 3 4 5 ... 9 10 11

1 2 3

int



mid - mid > n



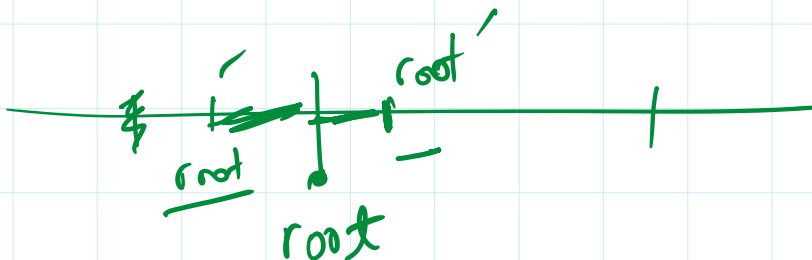
$$(0 + 100) / 2 = 50 \text{ --- scribbled out}$$

2. 313

2. 313636

$$\frac{10.0}{3.0} = 3.333 \dots$$

$$\begin{array}{r} 2.0001 \\ 2.0010 \\ \hline 0.0009 \end{array}$$



0 0 - - - 1 9 2

$\begin{matrix} 1 \\ 2 \end{matrix} \leftarrow \begin{matrix} 011 \\ 100 \end{matrix}$

$001 \rightarrow 010$
 $1 \rightarrow 2$

$\rightarrow (0101) \% 2$

$\underline{1 \ll 3}$

$\begin{matrix} 9 & 10 & 11 \\ 6 & 6 & 6 \\ \hline & & 1 \end{matrix}$

$\rightarrow 8 \quad 9 \quad 5 \quad 7 \quad 2 \quad 3$

\rightarrow

2	3	7	5	9	8
---	---	---	---	---	---

$\rightarrow 2 \quad 3 \quad 4 \quad 5 \quad 8 \quad 7 \quad 9$

\rightarrow $\begin{matrix} 8 & 9 & 5 & 7 & 2 & 3 & 4 \\ \text{idx to be swapped with} & & & & & & \end{matrix}$

$\begin{matrix} 2 & 3 & 4 & 5 & 7 & 8 & 9 \\ \text{cur.} & & & & & & \end{matrix}$

cb. lk / feedback

\rightarrow quick sort \rightarrow Aggressive cows
 \rightarrow ~~fast~~ subset \rightarrow

→ ~~for~~ Subset → ""