

$$1) L \rightarrow \{\emptyset\}$$

↑

$$2) \underline{0} \ 1 \rightarrow L \rightarrow \{1, \emptyset\}$$

↑

$$3) \underline{0} \ 2 \rightarrow L \rightarrow \{2, 1, \emptyset\}$$

↑

$$4) \underline{0} \ 3 \rightarrow L \rightarrow \{3, 2, 1, \emptyset\}$$

↑

$$5) \underline{1} \ 1 \rightarrow L \rightarrow \{3, 2, 1, \emptyset\}$$

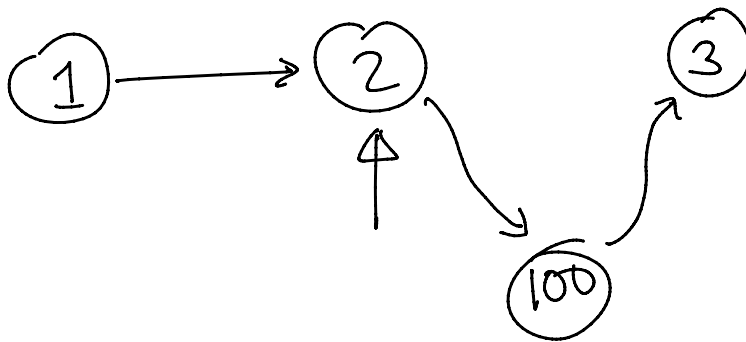
↑

$$6) \underline{2} \rightarrow L \rightarrow \{3, 1, \emptyset\}$$

↑



list<int> ← doubly linked list  
advance(iter)

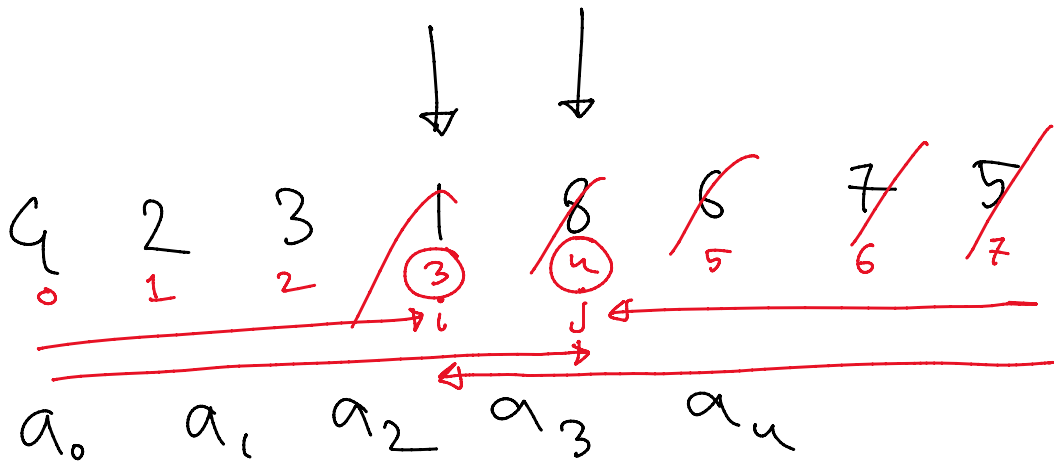


$$O(\sum |d|) \leftarrow \text{move}$$

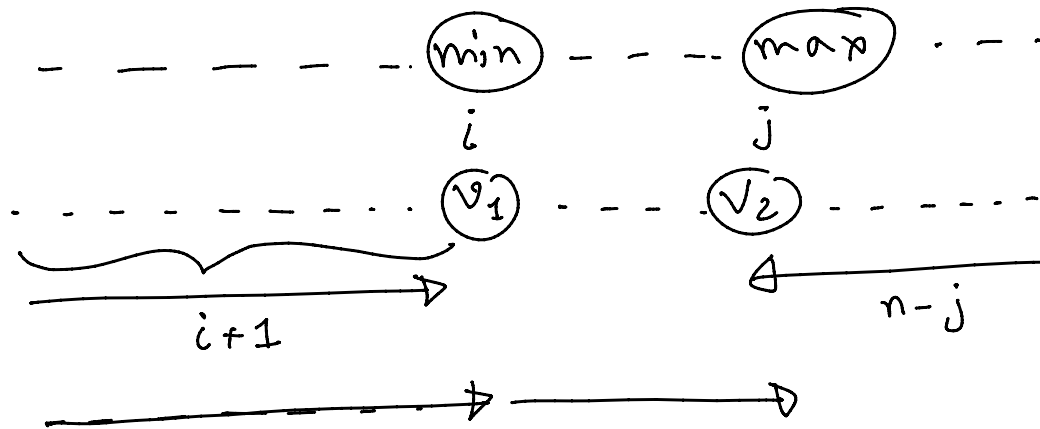
$$O(q) \leftarrow \text{insert/delete}$$

$$\rightarrow O(\max(\underbrace{q}_a, \underbrace{\sum |d|}_b)) \rightarrow O(\sum |d|)$$

$\rightarrow O(\max(5 \times 10^5, 10^6))$



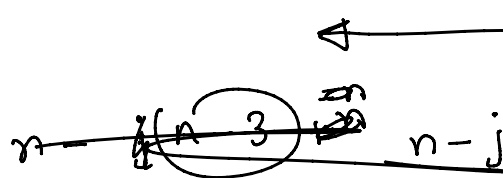
$s1 = 8$   
 $s2 = 5$   
 $s3 = 5$



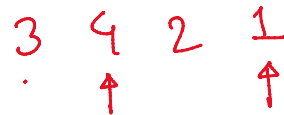
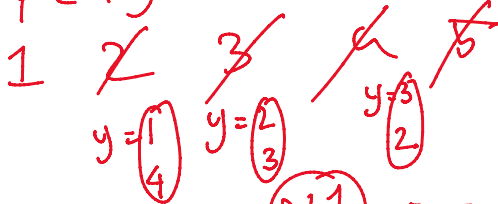
$s1 = 3+1+8-4$   
 $s1 = 8$   
 $s2 = 5$   
 $s3 = 5$

$s1 = i+1+n-j$   
 $s2 = j+1$   
 $s3 = n-j$

$y+p=n$   
 $p=n-y$



$j = n-3 \rightarrow 3$   
 $j = n-1 \rightarrow 1$   
 $j = n-2 \rightarrow 2$



case 1:



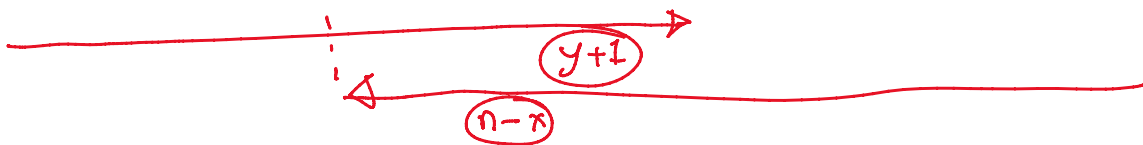
$= 2+1=3$

case 2:



case 2:

case 3:

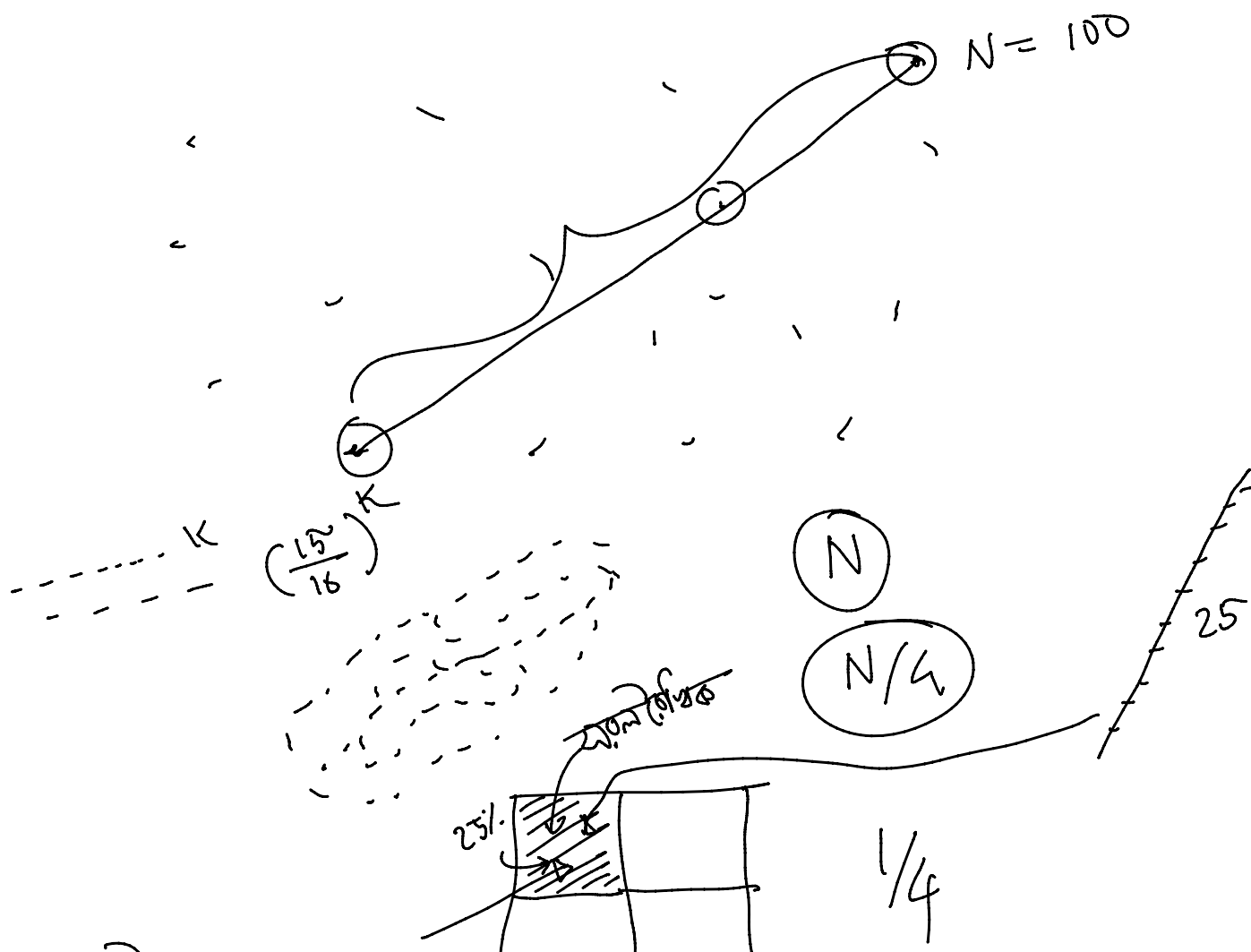


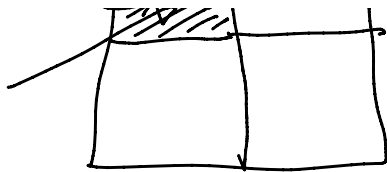
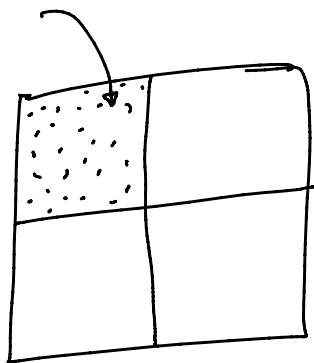
$$f(x) = (x^3 - 5x^2 + 9557) \% (x^2 + 13)$$

↑  
seed

$$(1 \sim 100) \rightarrow R$$

$$\frac{1 + 100}{2} = 50 = \text{expected value}(R)$$





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