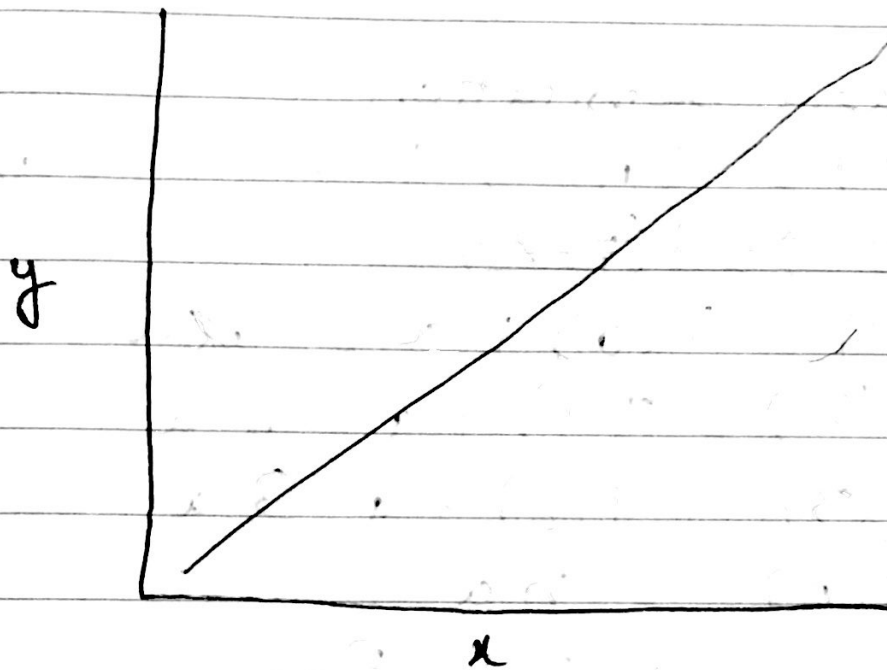


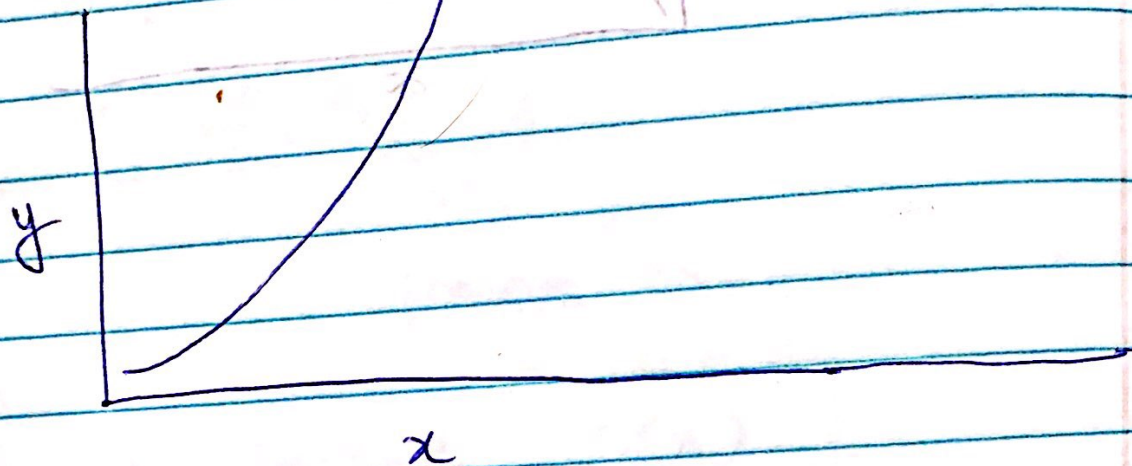
3. Mathematical version - $O(n)$



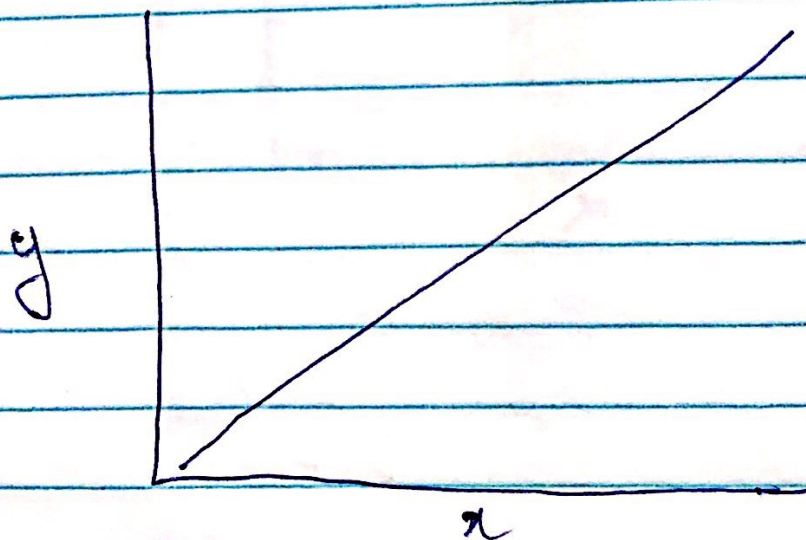
2

(a) Jacobsthal Number -

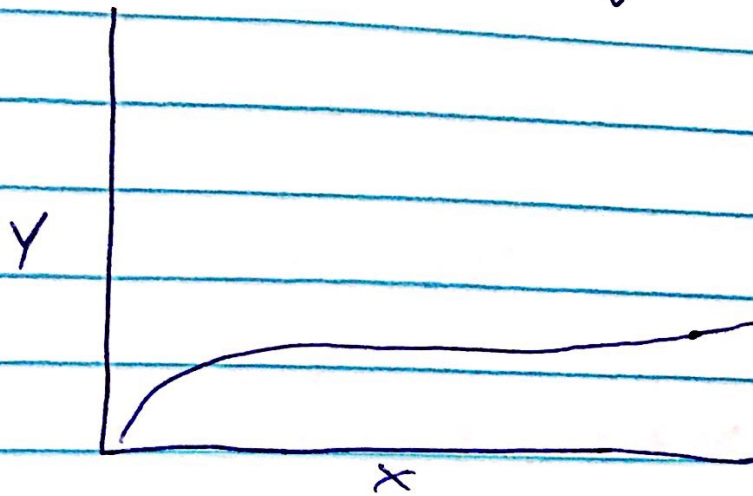
① Long Recursive Method - $O(2^n)$



2. Iterative Version - $O(n)$

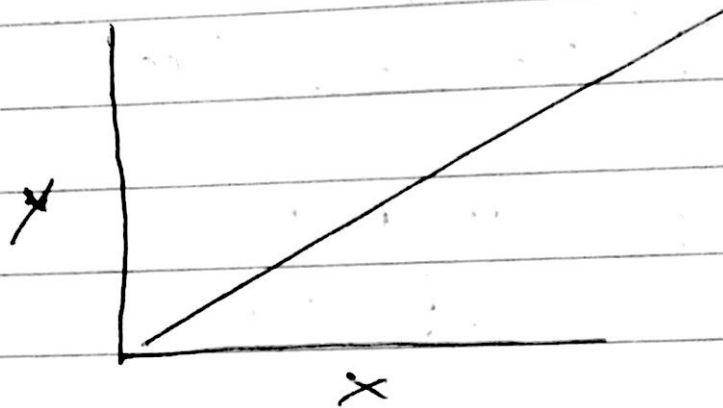


3. Recursive Power Method - $O(\log n)$



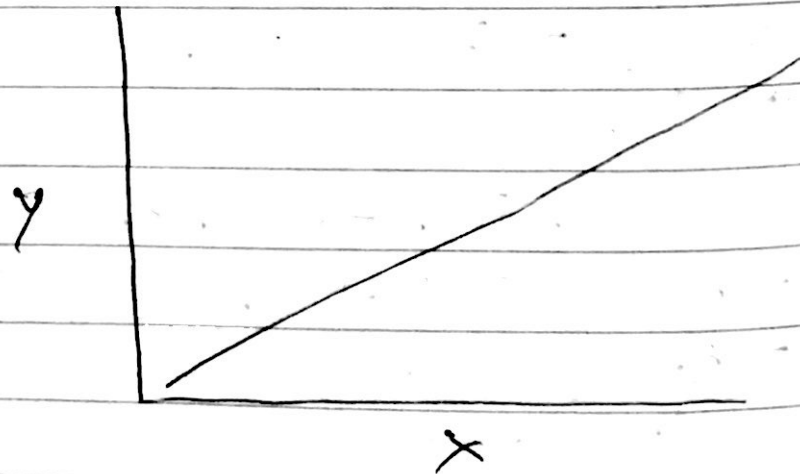
Runtime Complexity

1> Recursion Method - $O(n)$



Linear.

2> Iterative Method - $O(n)$



3 Recurrence relation for Minimum

Forward substitution

$$T(n) = T(n-1) + a, T(0) = a$$

~~$$T(n-1) = T(n-2) + a$$~~

$$T(1) = T(0) + a = a$$

$$T(2) = T(1) + a = 2a$$

$$T(3) = T(2) + a = 3a$$

$$T(n) = na$$

$$O(n) \text{ Ans.}$$