1) a) Aggregate method

① Fist insetion token $O(1)$ time
② Second One taken $O(1)$ time
③ third one taken $O(2)$ time
④ k^{th} one taken $O(2^{k-1})$ time
⑤ n^{th} one taken $O(2^{k-1})$ time

$T = O(1) + O(1) + O(2) + O(n) + \cdots + O(2^{k-1})$

$T = O(2^0) + O(2^1) + O(2^2) + O(2^3) + \ldots + O(2^{k-1})$

$T = O(n)$

b) Accounting method

$O(1)$ → for insertion
$O(n)$ → For resizing

$T = n \times O(1) + \frac{n}{2} \times O(n)$

$T = O(n) + O\left(\frac{n^2}{2}\right) = O(n^2)$

$T_a = \frac{T}{n} = O(n)$