

Here, looking at some examples

Operations	Cost
1	1
2	2
3	1
4	4
5	1
6	1
7	1
8	8

Cost of the operation for n elements

$$= \sum_{i=1}^{n-\log n} C + \sum_{j=0}^{\log n} 2^j$$

As the number of 2^j elements are only $\log n$ we have $n - \log n$ constants $\approx n$ constants

$$= n + (2n-1)$$

we know this is $< 3n$

$$= n + \frac{2^{\log n+1} - 1}{2-1}$$

$$\text{Aggregated cost} = \frac{\text{Total cost}}{\text{no. of operations}} = \frac{3n}{n} = 3$$

$$\text{Amortized cost} = \Theta(1)$$