

$$Q_2: B_{\text{ub}}(n) = O(n)$$

$$T(n) = \sum_{i=1}^n D(i) + \sum_{j=1}^{\log_3 n} 1$$

$$= \sum_{i=1}^{n^2} a_i + \sum_{j=1}^{\log_3 n} 1$$

$$= a \frac{(1+n^2)n^2}{2} + \lfloor \log_3 n \rfloor$$

$$= O(n^4)$$