Answers to Cracking the Coding Interview in LaTeXby Ross Spencer

Big O Additional Problems:

1.1 O(b)

1.2 O(b)

1.3 O(1)

1.4 O($\frac{a}{b}$)

1.5 O($\log_2(n)$)

1.6 O($\sqrt[2]{n}$)

1.7 O(n) in the case that each node has 1 child in the same direction (degenerate tree).

1.8 O(n), as you have no heuristics on where the node is located

1.9 O(n^2) as each copy is $1 + 2 + 3 + ... + n - 1 <= n(n) \in$ O(n^2)

1.10 O($\log_1 0(n)$), which is equalivent to O($\log_2(n)$) (up to a constant factor for change of base)

1.11 Checking if is in order takes O(s) in size of string s, otherwise makes successive calls to every possible string with c^s possibilities, so O($s * c^s$)

1.12 Total is O($b\log b$) for mergesort + $a\log b$ for binary searching b for each int in a. So, O($(a + b)\log b$).

Chapter 1: Arrays & Strings Interview Questions
1.1

Algorithm 1: IsUnique

```
for char c in string do
    arr = zeros(26);
    if arr[int(c)] == 0 then
        arr[int(c)] += 1;
    else
        Return False
    Return True
```