1. Give the best-case and average-case running time of the following function. You can assume that the shuffle operation requires $O(n)$ time.

```plaintext
function Bogo(A)
    SHUFFLE(A)
    if A is sorted then
        return A
    else
        return Bogo(A)
    end if
end function
```

2. Analyze the following sorting algorithm.

```plaintext
function Stooge(A, i, j)
    if A[i] ≥ A[j] then
        Swap A[i] and A[j]
    end if
    if j - i + 1 > 2 then
        Stooge(A, i, j - t)
        Stooge(A, i + t, j)
        Stooge(A, i, j - t)
    end if
    return A
end function
```

3. Let $0 < \epsilon < 1$. Suppose that we have an array $A$ of $n$ items such that the first $n - n'$ items are sorted. Describe an $O(n)$ time algorithm to sort $A$. 