Homework week 3

Complexity analyses

1. Sort the following functions in the ascending order of Big O notation:

$4n\log n + 2n$	2^{10}	$2^{\log n}$
$3n+100\log n$	$4n$	2^n
$n^2 + 10n$	n^3	$n\log n$

2. Given an integer number *n*, your task is to write two different algorithms in pseudo-codes to calculate 2^n, and evaluate the complexity of the algorithms.
3. Your task is to write operations of queue data structure in pseudo-codes using an array, then evaluate the complexities of the operations.
4. Your task is to write operations of queue data structure in pseudo-codes using a linked list, then evaluate the complexities of the operations.
5. Your task is to write operations of stack data structure in pseudo-codes using an array, then evaluate the complexities of the operations.
6. Your task is to write operations of stack data structure in pseudo-codes using a linked list, then evaluate the complexities of the operations.