1. True or False: The amount of work done by an algorithm usually depends on the speed of the computer.

2. Express the function \( f_1(n) = 1011 - 31 \log_7 n + 987n + 61n \log_6 n \) as concisely as possible in terms of Big-Oh (\( O() \)) notation \( O(n \log_6 n) \).

3. **Stack ADT.** (circle all that apply):
   (a) The functions of the stack ADT include pop(), push(), top(), and size().
   (b) The functions of the stack ADT include insertFirst(), insertLast(), removeTop(), removeLast(), and first().
   (c) The functions of the stack ADT all run in \( O(1) \) time.
   (d) The functions of a fixed-size array-based implementation of the stack ADT, can all be implemented to run in \( O(1) \) time.
   (e) The functions of a growable array-based implementation of the stack ADT, can all be implemented to run in \( O(1) \) time.
   (f) The functions of a singly-linked-list-based implementation of the stack ADT can all be implemented to run in \( O(1) \) time.

4. **Queue ADT.** Which of the following statements apply to the Queue ADT (circle all that apply):
   (a) The functions of the queue ADT include enqueue(), dequeue(), top(), and isEmpty().
   (b) The functions of the queue ADT include insertFirst(), insertLast(), removeTop(), removeLast(), and first().
   (d) The functions of the queue ADT all run in \( O(1) \) time.
   (e) The functions of a fixed-size array-based implementation of the queue ADT can all be implemented to run in \( O(1) \) time.
   (f) The functions of a growable array-based implementation of the queue ADT can all be implemented to run in \( O(1) \) time.
   (g) The functions of a singly-linked-list-based implementation of the queue ADT can all be implemented to run in \( O(1) \) time.

5. **Double-Ended (Deque) ADT.** Which of the following statements apply to the Deque ADT (circle all that apply):
   (a) The functions of the deque ADT include enqueue(), dequeue(), top(), and isEmpty().
(b) The functions of the deque ADT include insertFirst(), insertLast(), removeTop(), removeLast(), and first().

(c) The functions of the deque ADT all run in $O(1)$ time.

(d) The functions of a singly-linked-list-based implementation of the deque ADT can all be implemented to run in $O(1)$ time.

(e) The functions of a doubly-linked-list-based implementation of the deque ADT can all be implemented to run in $O(1)$ time.