1) Consider

   \[ f(n) = \]

   a) Write …

   b) Why …

2) Write …
   Explain …

3) Prove by mathematical induction that for \( n \geq 1 \) …

4) Consider the following …

   …

   Give …
5) Consider the situation where you are given a Singly Linked List of objects as in Lecture 5. An example is given below:

```java
class SLinkedList{
    SNode head;
    SNode tail;
    integer size;
}
```

A) Write (Java-like) pseudo-code …

B) Write (Java-like) pseudo-code …

C) Write (Java-like) pseudo-code …