CS 300 Data Structures

Problem Set #9 – Linked List cont.

1. Insertion at the tail requires a full traversal of this type of linked list:
    a. Linear, singly linked list, only a head pointer
    b. Linear, doubly linked list, head and tail pointers
    c. Circular, doubly linked list, only a head pointer
    d. a and c
    e. a, b and c
2. List two possible reasons to use a linked list instead of an array.

3. To store a fixed number of integers, which always uses more memory: a singly linked list or an array? Why?

4. Write the constructor for a typical singly linked list with head and tail pointers

5. Write a non-recursive function, `countNodes`, which counts and returns the number of nodes in a singly linked list.

6. Now rewrite the same function, `countNodes`, using recursion.