

COSC 350: Quiz 2
Chapter 2 & 3 and Section 7.2

1. (10 pts.) Which data structure, a *stack*, *queue*, or *deque*, would be the most appropriate for each of the following?
 - a) Simulating people waiting for service at a bank
 - b) A *FIFO* data structure
 - c) Keeping track of pending operations when implementing a recursive algorithm in a non-recursive programming language
 - d) Checking to see if a string is a palindrome
 - e) Balancing tags in an HTML document

2. (8 pts.) Identify the notation used for the following expressions and then evaluate the expression:
 - a) $3 \ 4 \ 7 \ * \ + \ 2 \ 3 \ * \ +$
 - b) $* \ + \ 3 \ 4 \ + \ 2 \ 2$

3. (6 pts.) Write $\frac{x + 1}{2x - 1} + 3x$ using the same notation that was used in problem 2a:

4. (4 pts.) How is adding an item to an *ordered list* different from adding an item to an *unordered list*?

10. (24 pts.) Give a Python implementation for an *ADT* for a *stack* using Python's built-in list data type.