Please answer the following questions:

1. Suppose you push the following numbers: 22, 24, 26, 28, 30, and 32 onto the stack, then you pop four items. List the numbers that are still in the stack.

{24,22} left is the top.

1. Suppose you add the numbers: 22, 24, 26, 28, 30, and 32 onto the queue, then remove four items. List the numbers that are still in the queue.

{30, 32} left is the front of the queue

1. Examine the following statement and explain which of the following is true:

a. The top of a stack is equivalent to the front of a queue. – You can only see the first element in the queue or top element in a stack. You can only remove one at a time.

b. In both the stack and the queue, items removed in sequence are the ones from

increasingly high index cells in the array.

1. Explain what LIFO and FIFO mean, and how they are used in Abstract data types?

Last In First Out = Stack. pop(), push, remove()

First In First Out = Queue. add(), remove()

1. Use examples to explain what Abstract data types (ADT) means, where ADTs are applied?

the differences between ADT and general purpose data structure.

General purpose data structures like, array, ArrayList<T>, and vector, are data structures that are so common that they’ve been built with common functionality for implementers to use.

Abstract data types are not fixed. Meaning that the user creates these type of data structures based on need. An example might be using storage that is larger than Integer.[(possible values, possible operations) for a given data type]

1. Think about the events happens in your life, are these events stored in your brain like stack or sometimes a queue?

For tasks, they’re stored in something like a stack; although, that could become stressful.

For **priority** tasks, they’re stored in something like a queue.

1. Describe the output of the stack after a series of operations: push(10), push(5), pop(), push(2), push(10), peek(), push(9), pop(), push(20), push(30), peek(), pop(), push(8).

{8, 20, 10, 2, 10} left is top

1. Describe the output of the queue after a series of operations: add(10), add(5), remove(), add(2), peek(), add(20), remove(), add(15), peek(), remove().

{20, 15}left is front