CSCI 204 In-Class Activity

Student name(s):

Today's date:

Note: submit the work at the end of the class.

Implement a Queue ADT using circular array without using a counter. Given the following partial class definition, complete the ADT. Study and answer the following questions.

```
class Queue:
    def __init__(self, maxsize = 4):
        self.maxsize = maxsize
        self.qarray = Array(self.maxsize)
        self.front  =                    # self.front is an integer, what should be the initial value?
        self.back   =                    # self.back is an integer, what should be the initial value?
```

1. What should be the values of front and back if the queue is empty?
2. What should be the values of front and back if the queue is full?
3. What are the values of front and back after the following operations for the maxsize == 4:
    a. enqueue 5, 6, 7
    b. dequeue
    c. dequeue
    d. enqueue 3, 4
4. Write the rest of the functions for the Queue ADT
    a. def is_empty(self)
    b. def is_full(self)
    c. def enqueue(self, item)
    d. def dequeue(self)
    e. def peek(self)