

4. (6 pts) Given 2 queues, Q1 and Q2, write a function to merge them into one queue Q3 and **return a pointer to Q3**. The nodes of these queues contain a member variable, *arrivalTime*, that specifies when the item arrived (lower arrival times arrived before higher arrival times). Q3 must maintain the nodes in order of ascending arrival times. You may use the standard enqueue, dequeue (returns nothing), size, and getFront (returns a pointer to the node) functions. You may also assume that the node class has a function, *getArrivalTime*, that returns the arrival time of the node. This operation will destroy the original 2 queues, meaning that you must physically move the nodes from the old queues to the new queues. You may not create any new node objects, but you may create pointers to node objects. **What is the Big-Oh running time of your function?**

(Extra space for question 4)