

## Quiz 10

Name: \_\_\_\_\_ NetID: \_\_\_\_\_

**1) (2 points)** An array of integers is called *nearly sorted* if the  $i$ -th smallest element appears in position  $i - 1$ ,  $i$ , or  $i + 1$  for every  $i$ . Write two arrays of length 8 that are nearly sorted but not sorted.

**2) (8 points)** In class, the method `int[] merge(int[] arr1, int[] arr2)` assumed both arrays were sorted and returned a sorted array containing all elements.

Rewrite `merge` so that it still returns a sorted array containing the elements of `arr1` and `arr2` even when the arrays are only nearly sorted. You may assume all elements are unique. *Hint: write a helper method to find the  $i$ -th smallest element.*