

## Data Structures Quiz 8 (20 minutes)

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

**By participating in this quiz, you agree to adhere to the honor code.**

Write an algorithm implementing "int[] sortAboveThresh(int thresh, int[] array)" that takes in a possibly unsorted integer array and returns a sorted array of all entries smaller than the integer thresh. Your implementation should be such that if thresh is smaller, the algorithm is more efficient, i.e., do not just sort array and then return everything above thresh. To be more specific, suppose there is  $K$  elements that is less than the threshold and the array has length  $N$ . Your algorithm should have time complexity  $O(\max(K \log K, N))$