

**Note:** Bonus questions are entirely optional. They can get very challenging and/or fall outside the course curriculum. Interested individuals may attempt.

7. There are  $n$  integers  $a_1, a_2, \dots, a_n$ . **Concatenate** the  $n$  integers such that the resulting number is **maximized**.

Design a greedy algorithm which works in  $O(n \log n)$  time. (Hint: Sorting them in descending order does not work.)