

Name of the Student: \_\_\_\_\_

**Q 1**

Write a function that takes an integer  $n$  and gives a list of  $n$  random single digit numbers. Use the built-in `RANDOM`.

**Q 2**

Modify your solution to Q 1, such that no repetitions are allowed. You may find the built-in `ADJOIN` useful here. Write two versions: one with `ADJOIN`, the other without.

**Q 3**

Write a recursive function `FLATTEN`, which takes a possibly nested list and returns a version where all nesting is eliminated. E.g. `((1 (2) 3) 4 ((5) 6) 7))` should be returned as `(1 2 3 4 5 6 7)`.

**Q 4**

Write a function that computes the letter grade of a student given his/her grade record. Grade records are of the form `(<Student ID> <grade of HWs> <Midterm> <Final>)`. Take the weights to be 0.3, 0.3 and 0.4, respectively. E.g. an input like `(770084 55 75 80)` should return `CC`. You may find it useful to write separate functions for subtasks, rather than trying to handle everything with a single function.

**Q 5**

Write a recursive function that takes a list of integers and returns the largest integer in the list.

**Q 6**

Write a recursive function that takes a list of integers and returns the *second* largest integer in the list.

**Q 7**

Write a recursive function that takes a list of integers and an integer  $n$ , and returns the  $n$ th largest integer in the list. You are not allowed to use any built-in sorting function.