QUIZ 1

COMP9021 PRINCIPLES OF PROGRAMMING

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$ python3 quiz_1.py
Enter an integer: 0

x is: 7921731533
L is: [56448162, 5433721, 34751217, 68622131, 65220111, 54349339, 40709944,
                                                    63967760, 48056573, 78300211]

The sum of all digits in x is equal to 41.

There are 7, 1 and 2 elements in L with a first digit that is
  greater than the last digit, equal to the last digit,
  and smaller than the last digit, respectively.

The number of members of L with 4 distinct digits is 2.
The number of members of L with 5 distinct digits is 3.
The number of members of L with 6 distinct digits is 4.
The number of members of L with 7 distinct digits is 1.

The minimal gap (in absolute value) between first and last digits
  of a member of L is 0.
The maximal gap (in absolute value) between first and last digits
  of a member of L is 6.

The number of pairs (f, l) such that f and l are the first and last digits
of members of L is maximal for (f, l) one of [(6, 1)].
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Date: Session 2, 2018.

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$ python3 quiz_1.py
Enter an integer: 1

x is: 9167024629
L is: [8470054, 34234785, 15826780, 66496171, 60329669, 63383683, 87455328,
                                                        50951092, 28179657, 12597620]

The sum of all digits in x is equal to 46.

There are 6, 1 and 3 elements in L with a first digit that is
  greater than the last digit, equal to the last digit,
  and smaller than the last digit, respectively.

The number of members of L with 3 distinct digits is 1.
The number of members of L with 5 distinct digits is 4.
The number of members of L with 6 distinct digits is 2.
The number of members of L with 7 distinct digits is 3.

The minimal gap (in absolute value) between first and last digits
  of a member of L is 0.
The maximal gap (in absolute value) between first and last digits
  of a member of L is 5.

The number of pairs (f, l) such that f and l are the first and last digits
of members of L is maximal for (f, l) one of [(1, 0)].
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$ python3 quiz_1.py
Enter an integer: 2

x is: 242886303
L is: [11391326, 48460313, 22694018, 98780219, 89889692, 41357375, 33766938,
                                                    81328449, 28483526, 81443550]

The sum of all digits in x is equal to 36.

There are 3, 1 and 6 elements in L with a first digit that is
  greater than the last digit, equal to the last digit,
  and smaller than the last digit, respectively.

The number of members of L with 4 distinct digits is 1.
The number of members of L with 5 distinct digits is 3.
The number of members of L with 6 distinct digits is 5.
The number of members of L with 7 distinct digits is 1.

The minimal gap (in absolute value) between first and last digits
  of a member of L is 0.
The maximal gap (in absolute value) between first and last digits
  of a member of L is 8.

The number of pairs (f, l) such that f and l are the first and last digits
of members of L is maximal for (f, l) one of [(1, 6), (2, 6), (2, 8), (3, 8),
                                  (4, 3), (4, 5), (8, 0), (8, 2), (8, 9), (9, 9)].
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$ python3 quiz_1.py
Enter an integer: 105

x is: 3396132287
L is: [266286, 41905292, 70335023, 76567783, 44922498, 39290063, 21983326,
                                                    46748446, 22233298, 19806125]

The sum of all digits in x is equal to 44.

There are 3, 1 and 6 elements in L with a first digit that is
  greater than the last digit, equal to the last digit,
  and smaller than the last digit, respectively.

The number of members of L with 3 distinct digits is 1.
The number of members of L with 4 distinct digits is 3.
The number of members of L with 5 distinct digits is 3.
The number of members of L with 6 distinct digits is 2.
The number of members of L with 7 distinct digits is 1.

The minimal gap (in absolute value) between first and last digits
  of a member of L is 0.
The maximal gap (in absolute value) between first and last digits
  of a member of L is 6.

The number of pairs (f, l) such that f and l are the first and last digits
of members of L is maximal for (f, l) one of [(2, 6), (7, 3)].
```