**Anagrams**

Given a word, how many different unique words can be made using the same characters?

**Input:** The only input that will be given is the length of the word and the word in separate lines.

**Output:** The number of unique words, and the words printed out in alphabetical order.

**Example Input:**

3

abc

**Example Output:**

6

abc

acb

bac

bca

cab

cba