C++ Fundamentals: Exam 1

The following tasks should be submitted to the SoftUni Judge system, which will be open starting **Sunday, 20 January 2019, 09:00** (in the morning) and will close on **Sunday, 20 January 2019, 15:00**.

For this exam, the code for each task should be a single C++ file, the contents of which you copy-paste into the Judge system.

Please be mindful of the strict input and output requirements for each task, as the tasks are evaluated automatically and not following the requirements strictly may result in your program's output being evaluated as incorrect, even if the program's logic is mostly correct.

You can use C++03 and C++11 features in your code.

Unless explicitly stated, any integer input fits into **`int`** and any floating-point input can be stored in **`double`**. On the Judge system, a C++ **`int`** is a **`32-bit`** signed integer and a C++ **`double`** is a **`64-bit`** IEEE754 floating point number.

NOTE: the tasks here are NOT ordered by difficulty level.

Task 1 – Different Strings

Software developers often need to compare text and find differences between one string and another – this comes up from things like source control, checking test results, and even automating error correction. So, having a tool that indicates the differences between two strings – often called a diff tool – is very useful for these situations.

You task is to write a program, which – given two lines of text of the same length containing English letters, digits, and punctuation – prints a **diff line** that indicates the **differences between the two input lines**. The program should also print the **number of differences**.

The diff line should have the same length as the input lines. For each symbol at a position **`i`** of the diff line:

- If both input lines have the same character at position **`i`**, print that character
- If both input lines have the same English letter (**`a-z`** or **`A-Z`**) at position **`i`**, but one has it as uppercase and the other has it as a lowercase, print the uppercase letter (don't consider this as a difference)
- If the character is at position **`i`** is different between the two lines (i.e. none of the above is true), print the character **`#`** and count a difference

Input

The first line of the standard input will contain a single positive integer number – the number of symbols in each of the following two lines.

The next two lines on the standard input, containing punctuation, digits, and English letters (no spaces), each line with no more than **`150`** characters.

Output

The first line of the standard output should be the diff between the two input lines.
The second line of the standard output should be the number of differences between the two input lines.
The third line of the standard output should be the number of same characters.
The fourth line of the standard output should be the sum of the digits.

Restrictions

Each line will contain no more than **150** characters.

Example I/O

Example Input	Expected Output
10 some-text1 soM3_Teht1	soM##Te#t1 3 7 5
9 some-/ex} $eM3M/eX}	##M##/eX} 4 5 3