B: Counting Vowels

Maria likes to read--novels, biographies, science books, history, and computer books. She's curious to know which letters appear most often in the books she reads. She has written a computer program that reads a sentence and produces a count of how many times each vowel appears in the sentence. Can you do this also?

Input

The first line of input is an integer (1 <= T <= 10) indicating the number of test cases to follow. Each test case consists of a single sentence containing between 1 and 100 characters. Both uppercase and lowercase letters may be used.

Output

For each input test case, your program must output the word "Case" followed by a space, followed by the test case number, followed by a colon and space, followed by a list of the vowels (a, e, i, o, u). Each vowel appears in lowercase followed by an equals sign, followed by an integer. The vowels are separated by a single space.

Sample Input

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eeexxAa#%ubbExxxxi\$\$xxoxxUuui

Maria is the most skilled programmer At our school. Her team has won several programming contests this year.

Sample Output

Case 1: a=2 e=4 i=2 o=1 u=4 Case 2: a=4 e=3 i=3 o=5 u=1 Case 3: a=5 e=6 i=2 o=3 u=0