A player is assigned a tutor who will help them learn the concepts in the subject they are studying. Of course we want the match to be both effective and fun, so our chief scientist has devised this following algorithm to maximize the Fun-Learning Factor (FLF) of a player-tutor pair. For a given player and tutor, the FLF is calculated as follows:

- If the length of the tutor's name is odd, the base FLF is the number of vowels in the player's name multiplied by 1.5.
- If the length of the tutor's name is even, the base FLF is the number of consonants in the player's name multiplied by 1.
- If the length of the tutor's name shares any common factors (besides 1) with the length of the player's name, the FLF is increased by 50% above the base FLF.

Write a program that assigns tutors to players in a way that maximizes the total FLF over the set of players. Each tutor can only be paired with a single player.

Input:

Your program should run on the command line and take as input two newline separated files. The first file contains the names of the tutors and the second the names of the players.

Output:

The output should be the total FLF and the corresponding assignment of tutors to players. You can assume that the number of tutors and players is equal and you don't need to worry about malformed input.