H: Transylvanian Transportation Transformations

Transylvanian authoritaties finally got serious about their monster problems. They rounded up a bunch of werewolves, vampires, and zombies and were ready to ship them off on trains for zoos around Europe. Being quite dangerous even to each other, they had to be separated, so were placed one per boxcar for the trip. Even then, they could reach ahead and back to the next adjacent cars to attack their nearest neighbor in each direction, but at least the attacks were not deadly. You may assume that each attacks both neighbors (except obviously for the first and the last monster).

It so happens that all these characters are nocturnal. When a werewolf meets a vampire, the werewolf wins - biting the vampire. By the next night, the vampire awakens as another werewolf. When a vampire meets a zombie, the vampire wins - biting the zombie. By the next night, the zombie awakens as another vampire. When a zombie meets a werewolf, the zombie wins, biting the werewolf. By the next night, the werewolf awakens as another zombie.

The trains travels slowly, taking multiple days to reach its destination. Each night the attacks resume. Given the initial arrangement of monsters and the number of days to reach the zoos, your task is to determine the final arrangement.

Input

There may be multiple trains taking various numbers of days to reach each zoo. The first line will contain a positive integer representing the number of trains to analyze. Details of each train are given in two lines. The first of the two lines contains two positive integers: the number of boxcars (also the number of monsters) for that train, and the number of days (nights) on the train. The second of the two lines is a string of uppercase letters V, W, and Z representing the sequence of monsters on that train.

Output

For each train, display the train number and a string similar to the input (see sample below) that represents the sequence of monsters as they arrive at the zoo.

Sample Input

```
2
3 1
ZWV
3 2
ZWV
```

Sample Output

```
Train 1: ZZW
Train 2: ZZZ
```