

Problem 1—Recording a Tape

In the olden days before compact discs dominated the market, albums were sold on cassette tape. Unlike a CD which boasts an unbroken playlist, a cassette tape would contain approximately half of the songs on Side A and rest on Side B. Care would be taken that Side A and Side B would be as close to the same size as possible; however, the absolute order of the songs was sacrosanct; to alter the order would be to destroy the artist's vision. Given a variety of blank cassettes of various lengths and a list of song lengths, you are to print out the smallest cassette that can contain the songs as well as the list of songs on both sides. You will only be given data cases that generate a unique answer.

INPUT SPECIFICATION. The input will consist of one or more data cases. The first line will consist of at least one and at most ten positive integers separated by exactly one space and terminated by `<EOLN>`. These integers represent the total duration (both sides) of the blanks in stock. This will be followed by no more than 100 lines containing the durations of the songs in album order. Each line will be in the format `"Mm Ss<EOLN>"`, where M is a nonnegative integer representing the number of whole minutes in the duration and S is a nonnegative integer less than 60 indicating the remaining number of seconds in the song. The last line in the data case will be `"%<EOLN>"`. The last data case in the file will be followed immediately by `<EOF>`.

OUTPUT SPECIFICATION. The output cases should appear in the same order that they appear in the input. Each case should begin with the total duration of the smallest blank that can accommodate the songs followed by `<EOLN>`. The next line should be `"Side A"` followed by `<EOLN>`. Then should follow the durations of the songs on Side A, in the same format given in the input file, with `<EOLN>` following each one. The Side B heading and songs should follow using the same format for the Side A heading and songs. The last line of the output case should be `"%"` followed by `<EOLN>`. There should be no extra spaces or `<EOLN>`'s beyond what is described here.

SAMPLE INPUT.

```
56•90•120<EOLN>
20m•44s<EOLN>
4m•36s<EOLN>
7m•18s<EOLN>
13m•8s<EOLN>
9m•6s<EOLN>
8m•12s<EOLN>
%<EOLN>
30•45<EOLN>
3m•11s<EOLN>
4m•45s<EOLN>
13m•45s<EOLN>
6m•8s<EOLN>
%<EOLN>
<EOF>
```

SAMPLE OUTPUT.

```
90<EOLN>
Side•A<EOLN>
20m•44s<EOLN>
4m•36s<EOLN>
7m•18s<EOLN>
Side•B<EOLN>
13m•8s<EOLN>
9m•6s<EOLN>
8m•12s<EOLN>
%<EOLN>
45<EOLN>
Side•A<EOLN>
3m•11s<EOLN>
4m•45s<EOLN>
Side•B<EOLN>
13m•45s<EOLN>
6m•8s<EOLN>
%<EOLN>
<EOF>
```