

You have a long drive by car ahead. You have a tape recorder, but unfortunately your best music is on CDs. You need to have it on tapes so the problem to solve is: you have a tape  $N$  minutes long. How to choose tracks from CD to get most out of tape space and have as short unused space as possible.

Assumptions:

- number of tracks on the CD does not exceed 20
- no track is longer than  $N$  minutes
- tracks do not repeat
- length of each track is expressed as an integer number
- $N$  is also integer

Program should find the set of tracks which fills the tape best and print it in the same sequence as the tracks are stored on the CD

## Input

Any number of lines. Each one contains value  $N$ , (after space) number of tracks and durations of the tracks. For example from first line in sample data:  $N = 5$ , number of tracks=3, first track lasts for 1 minute, second one 3 minutes, next one 4 minutes

## Output

Set of tracks (and durations) which are the correct solutions and string 'sum:' and sum of duration times.

## Sample Input

```
5 3 1 3 4
10 4 9 8 4 2
20 4 10 5 7 4
90 8 10 23 1 2 3 4 5 7
45 8 4 10 44 43 12 9 8 2
```

## Sample Output

```
1 4 sum:5
8 2 sum:10
10 5 4 sum:19
10 23 1 2 3 4 5 7 sum:55
4 10 12 9 8 2 sum:45
```