Artificium

Who is Leading?

Runtime Limit – 3s

Problem Statement

In rugby, you can score in 4 ways :

- a **try** is worth **5** points
- a **conversion** after a try is worth **2** points
- a **penalty** is worth **3** points
- a **dropped goal** is worth **3** points

Given the timestamps and the number of points scored for each team at each score, calculate the total advantage time for each team during the match. A team has the advantage when its total score is greater than the other team's.

Consider that the points are scored at the first second of a minute.

A match is 80 minutes long.

Format

Input

Line 1: a string *teams*, the name of each team, separated by a comma

Line 2: a string *scores1*, 4 lists of space-separated timestamps for when the first team scored: a try, a conversion, a penalty, and a dropped goal. The four lists are comma-separated and any of them may be empty. Timestamps are integers.

Line 3: a string *scores2*, a sorted list of timestamps for the second team, in the same format as that for the first team.

Output

Line 1: *data* for the first team

Line 2: *data* for the second team

data is in the format of ***name*: *score time*** where:

name is the team's name

score is the team's final score

time is the time in minutes during which the team has an advantage

Constraints

1 ≤ Timestamps (in minutes) ≤ 80

Sample

Input

A team,Another team

8 31 37,32,7,10

15 19,17 20,27 29 67,76

Output

A team: 23 42

Another team: 26 23