

Imagine a game in which two or more players start with the same pile of coins, consisting of some number of quarters, dimes, nickels and pennies. In each round of the game, the winner of the round adds to his or her pile the same winning amount of money from each of the other players' piles. The objective is to maximize both the total amount of money and the number of coins in your pile. In fact, players are ranked after each round by decreasing *score*—the product of the total amount of money (in cents) and the number of coins in their pile. When a player gives a winning amount of money to a round winner, they do so greedily using the least possible number of coins. If they cannot give the exact winning amount of money for lack of correct change, they must give the largest amount they can less than the winning amount.

### *Input Format*

The first line of input contains a positive number  $n \geq 2$ , denoting the number of players. The individual players are numbered from 1 to  $n$ . The second line of input contains four positive numbers, denoting the number of quarters, dimes, nickels and pennies with which each player starts. The remaining lines of input—one per round—contain the number of the player winning the round and the winning amount of money each other player must pay the winner.

### *Output Format*

After each round of the game, list the players and their scores, in order of decreasing score.

### *Input and Output Sample*

*see reverse side of this page*

### *Input Sample*

```
4
40 10 10 10
3 153
1 172
2 50
4 102
1 23
3 40
4 92
```

### *Output Sample*

```
player 3 score 157043
player 1 score 61427
player 2 score 61427
player 4 score 61427
```

```
player 1 score 138593
player 3 score 125889
player 2 score 42585
player 4 score 42585
```

```
player 1 score 131097
player 3 score 118745
player 2 score 56145
player 4 score 38465
```

```
player 1 score 113793
player 3 score 102305
player 4 score 73097
player 2 score 45033
```

```
player 1 score 141120
player 3 score 94128
player 4 score 66216
player 2 score 39560
```

```
player 1 score 133000
player 3 score 115536
player 4 score 60652
player 2 score 35260
```

```
player 1 score 115104
player 4 score 101556
player 3 score 98800
player 2 score 27740
```