GOUCHER COLLEGE

AP INSTITUTE 2015
PINEWOOD DERBY

Problem:

	LANE				
HEAT	**1**	**2**	**3**	**4**	**5**
A	28	27	25	22	18
B	14	13	11	8	4
C	26	25	23	20	16
D	9	8	6	3	29
E	20	19	17	14	10
F	2	1	29	26	22
G	10	9	7	4	30
H	21	20	18	15	11
I	3	2	30	27	23
J	25	24	22	19	15
K	11	10	8	5	1
L	22	21	19	16	12
M	30	29	27	24	20
N	12	11	9	6	2
O	4	3	1	28	24
P	19	18	16	13	9
Q	27	26	24	21	17
R	13	12	10	7	3
S	5	4	2	29	25
T	16	15	13	10	6
U	24	23	21	18	14
V	6	5	3	30	26
W	18	17	15	12	8
X	29	28	26	23	19
Y	17	16	14	11	7
Z	1	30	28	25	21
2A	8	7	5	2	28
2B	23	22	20	17	13
2C	7	6	4	1	27
2D	15	14	12	9	5

The Pinewood Derby is an interesting phenomenon, wherein parents of young children assist their offspring to create model racing cars made out of, well, pine wood. The idea behind this ritual is to create the fastest car to race a downhill track. Some of the more modern tracks have built-in timers; however in our more modest contest, we will have heats, which insure that the car of each contestant competes in five races, each time in a different lane (track) in the course. Also, ideally, contestants race against different opponents in each heat, although this may not always occur.

This chart shows 30 different contestants competing in as many heats. Of course, the number of contestants will vary, being no less than 10 and no more than 250. The total number of heats and contestants is always equal, and there are always five contestants in each heat. The data will consist first of the number of heats/contestants, followed by the name of each heat (one or two characters) and the number of contestants in each heat.

Following these data are the results of each heat, showing the first through fifth places. For example, for the chart to the left, "A, 3, 4, 5, 2, 1" in this second part of the data means that in the first heat, contestant 18 came in first, 22 came in second, 28 came in third, etc. First place earns one point, second place two points, etc. In the case of ties, double points are awarded and the next place points are skipped: "XX, 1, 3, 1, 4, 5" would indicate there was a tie for first place; the car in lane two then came in third.

Thus at the end of the heats each contestant will have earned between five and twenty-five points, inclusive. This then determines the final standing, with the lowest number of points earning first place, etc. If there are ties, for example if there are two contestants each with five points, they share first place, and the next-highest contestant moves to second.

You are to print out the top five places, and the number(s) of the contestant(s) in each place.

Sample Input:

```
30
A 28 27 25 22 18
B 14 13 11 8 4
C 26 25 23 20 16
D 9 8 6 3 29
E 20 19 17 14 10
F 2 1 29 26 22
G 10 9 7 4 30
H 21 20 18 15 11
I 3 2 30 27 23
J 25 24 22 19 15
K 11 10 8 5 1
L 22 21 19 16 12
M 30 29 27 24 20
N 12 11 9 6 2
O 4 3 1 28 24
P 19 18 16 13 9
Q 27 26 24 21 17
R 13 12 10 7 3
S 5 4 2 29 25
T 16 15 13 10 6
U 24 23 21 18 14
V 6 5 3 30 26
W 18 17 15 12 8
X 29 28 26 23 19
Y 17 16 14 11 7
Z 1 30 28 25 21
2A 8 7 5 2 28
2B 23 22 20 17 13
2C 7 6 4 1 27
2D 15 14 12 9 5
A 3 4 5 2 1
B 2 3 4 5 1
C 1 2 3 4 5
D 3 4 2 1 5
E 5 3 2 1 4
F 1 2 3 4 5
G 1 2 3 4 5
H 3 2 1 4 5
I 1 2 3 4 5
J 1 2 3 4 5
K 1 2 3 4 5
L 2 3 4 5 1
M 2 3 4 5 1
N 3 4 5 2 1
O 1 3 4 5 2
P 2 1 5 3 4
Q 1 2 3 4 5
R 5 3 4 2 1
S 2 3 4 5 1
T 1 2 4 3 5
U 4 3 2 1 5
V 3 5 4 2 1
W 2 3 1 5 4
X 3 4 5 2 1
Y 1 4 5 2 3
Z 1 2 3 4 5
2A 2 3 5 4 1
2B 2 1 3 5 4
2C 4 3 2 5 1
2D 4 3 5 2 1
```

Sample Output:

```
FIRST PLACE   18
SECOND PLACE  3
THIRD PLACE  4
FOURTH PLACE 2
FIFTH PLACE  22 25 26
             (in any order)
```

TEST DATA

Test Input:

```
10
A 1 3 5 7 9
B 2 4 6 8 10
C 3 5 7 9 1
D 4 6 8 10 2
E 5 7 9 1 3
F 6 8 10 2 4
G 7 9 1 3 5
H 8 10 2 4 6
I 9 1 3 5 7
J 10 2 4 6 8
A 5 4 3 2 1
B 4 3 5 2 1
C 5 3 2 1 4
D 4 2 3 1 5
E 5 4 1 2 3
F 3 2 1 5 4
G 1 2 5 4 3
H 2 1 4 5 3
I 1 5 4 3 2
J 1 5 4 3 2
```

Test output:

```
FIRST PLACE 10
SECOND PLACE 9
THIRD PLACE 7 8 (in any order)
FOURTH PLACE 6
FIFTH PLACE 5
```