25 World chess championship
12 points

Introduction

Current world chess champion has requested a new chess-playing computer to train. The architecture of this chess-playing computer is composed by different modules and you are the developer of one important software part: the chess piece relative value module. This module will find out the value of the pieces that are still playing and the value of the ones already captured. Calculations of the value of pieces provide a rough idea of the state of play and help the computer to evaluate positions.

The chess pieces are assigned certain points to show how valuable they are. These points are shown in the table below:

The Queen	9 points
The Rook	5 points
The Bishop	3 points
The Knight	3 points
The Pawn	1 point

Obviously the value of the King is undefined as it cannot be captured during the course of the game.

The board is represented in an 8x8 two-dimensional array. Each array element would identify what piece occupied the given square, or altripletively, if the square is empty. A common encoding is to consider 0 as empty, positive as white, and negative as black, e.g., white pawn +1, black pawn −1, white knight +2, black knight −2, white bishop +3, and so on. Then the white pieces are identifed as follow:

1 white pawns
2 white knights
3 white bishops
4 white rooks
5 white queens
6 white king

Accordingly the black pieces are:

1 black pawns
2 black knights
3 black bishops
4 black rooks
5 black queens
6 black king

And this is the setup at the start of a game:

-4	-2	-3	-5	-6	-3	-2	-4
-1	-1	-1	-1	-1	-1	-1	-1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
4	2	3	5	6	3	2	4

Input

The input will be a sequence of 64 integer values representing the pieces in the board in a given moment of the game. For example:

```
0 0 0 0 0 -4 0 0 0 0 0 -6 0 0 0 0 0 -4 0 2 0 0 -1 -1 0 0 0 6 1 0 0 0 -1 0 0 0 0 0 1 1 0
-1 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
```

Output

The output of the program report a couple of lines. The first one has two integer values and a list. The first represent the total relative value of the white pieces in game and the second the total relative value of the white pieces captured. The list will contain the white pieces captured following this order: pawns, knights, bishops, rooks and queen.
The second line has also two integer's values. The first represent the total relative value of the black pieces in game and the second the total relative value of the black pieces captured. The list will contain the black pieces captured following this order: pawns, knights, bishops, rooks and queen.
This is the output for the previous example:

```
11 28 [1, 1, 1, 1, 1, 2, 3, 3, 4, 5]
-14 -25 [-1, -1, -1, -1, -2, -2, -3, -3, -5]
```