28 Flags

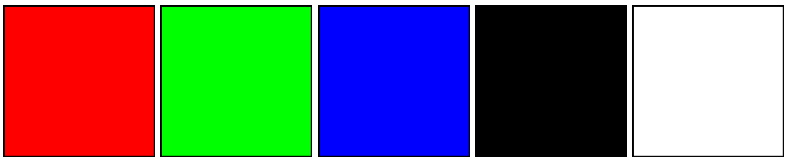
14 points

Introduction

Lots of colors can be represented with RGB color model. RGB means: "Red" "Green" "Blue", because these are the primary colors that, applying some combinations of light for every value, can become to another color.

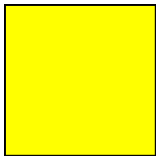
For each of these three colors, the light will be represented as an integer between 0 and 255 (both included).

Let's see some examples:



Color= [R], [G], [B]
RED = [255], [0], [0]
GREEN = [0], [255], [0]
BLUE = [0], [0], [255]
BLACK = [0], [0], [0]
WHITE = [255], [255], [255]

So, to make, for example, a yellow color, we know that it is a composition of GREEN and RED:



YELLOW: [255], [255], [0]

With this color model you can represent and recognize colors.

This is a table with all the Spanish Communities' flag colors, represented with RGB model. **Every flag has at least two colors.** This table has the colors **sorted by abundancy**. So, the first color is the most abundant color in the flag. In the table, there is a **maximum of three color** representations.

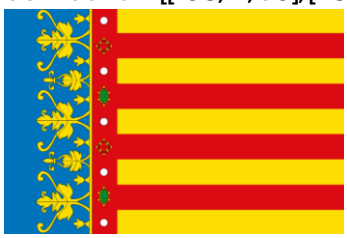
Table of Spanish Communities Flags

- **Andalucia** = [[0, 102, 51], [255, 255, 255], [255, 228, 77]]	- **Comunidad Valenciana** = [[0, 114, 188], [218, 18, 26], [252, 221, 9]]
- **Aragon** = [[252, 221, 9], [218, 18, 26], [15, 71, 175]]	- **Extremadura** = [[100, 0, 67], [255, 255, 255], [0, 0, 0]]
- **Canarias** = [[255, 255, 255], [7, 104, 169], [255, 204, 0]]	- **Galicia** = [[0, 153, 204], [255, 255, 255], [0, 91, 191]]
- **Cantabria** = [[255, 255, 255], [237, 28, 36], [0, 113, 188]]	- **Islas Baleares** = [[252, 221, 9], [218, 18, 26], [255, 255, 255]]
- **Castilla-La Mancha** = [[162, 28, 28], [255, 204, 0], [0, 0, 0]]	- **La Rioja** = [[181, 41, 33], [255, 255, 255], [0, 0, 0]]
- **Castilla y Leon** = [[116, 44, 100], [255, 255, 255], [252, 221, 9]]	- **Pais Vasco** = [[213, 43, 30], [255, 255, 255], [0, 155, 72]]
- **Catalunya** = [[252, 221, 9], [218, 18, 26]]	- **Principado de Asturias** = [[0, 102, 255], [247, 212, 23]]
- **Comunidad de Madrid** = [[198, 11, 30], [255, 255, 255]]	- **Region de Murcia** = [[156, 31, 45], [252, 183, 20]]
- **Comunidad Foral de Navarra** = [[237, 45, 29], [227, 228, 229], [234, 193, 2]]	

HINTS: Notice that the list is sorted alphabetically. Also, there are no accents or special characters like "ñ". There is a .txt file where you can find this list in the "Guides and tools" section.

Examples:

Comunidad de Madrid = [[198, 11, 30], [255, 255, 255]]



Comunidad Valenciana = [[0, 114, 188], [218, 18, 26], [252, 221, 9]]

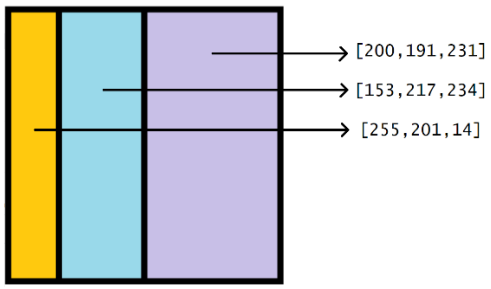
Goal

We want you to write a program that, given a color or colors (maximum of three colors) represented with RGB model, return the flag that best matches. If there is a tie, return all the flags that tied.

The rules are simple:
To compare two colors, we will sum the absolute difference for each RGB value. For example, comparing:

[0, 0, 10] and [5, 0, 10] → The difference is (|0-5|+|0-0|+|10-10|) = 5

[255, 55, 0] and [0, 254, 10] → The difference is (|255-0|+|55-254|-|0-10|) = 466



If only one color is given, we compare it **with the most abundant color** of every flag (The first color on the Community value).	If a second color is given, we compare its match **only to the second color** of every flag.	If a third color is given, we compare its match **only to the third color** of every flag.
Random input example [123, 211, 46] → [200, 191, 231] |123 - 200| + |211 - 191| + |46 - 231| = 282 **282**	Random input example [123, 211, 46] → [200, 191, 231] [35, 106, 200] → [153, 217, 234] |123 - 200| + |211 - 191| + |46 - 231| = 282 |35 - 153| + |106 - 217| + |200 - 234| = 263 **282 + 263 = 545**	Random input example [123, 211, 46] → [200, 191, 231] [35, 106, 200] → [153, 217, 234] [200, 52, 117] → [255, 201, 14] |123 - 200| + |211 - 191| + |46 - 231| = 282 |35 - 153| + |106 - 217| + |200 - 234| = 263 |200 - 255| + |52 - 201| + |117 - 14| = 307 **282 + 263 + 307= 852**

HINTS: Notice that if the input contains three colors, the communities' flags with less than three colors are not going to be considered as possible matches.

Input

One, two or three lines representing a color expressed using RGB color model.
A single character '#' marks the end of the input lines.

Output

Return the flag that best matches, or all the flags that tied with the first position.
Then, return the flag or flags with the second position.
For every flag returned, print its difference.
The output message must follow this format:

```
1st community flag: COMMUNITY with difference: DIFFERENCE
2nd community flag: COMMUNITY with difference: DIFFERENCE
```

If there's more than one flag for a position (for example, there is a tie-on 1st position), **sort it alphabetically** and print the message with "flags" instead of "flag". For example:

```
1st community flags: COMMUNITY with difference: DIFFERENCE
1st community flags: COMMUNITY with difference: DIFFERENCE
2nd community flag: COMMUNITY with difference: DIFFERENCE
```

Example 1

Input

```
0 0 0
#
```

Output

```
1st community flag: Andalucia with difference: 153
2nd community flag: Extremadura with difference: 167
```

Example 2

Input

```
255 230 10
220 20 30
#
```

Output

```
1st community flags: Aragon with difference: 21
1st community flags: Catalunya with difference: 21
1st community flags: Islas Baleares with difference: 21
2nd community flag: Cantabria with difference: 301
```

Example 3

Input

```
252 221 9
218 18 26
200 200 200
#
```

Output

```
1st community flag: Islas Baleares with difference: 165
2nd community flag: Aragon with difference: 349
```