

Problem D

Artist Preference Color Model

Time Limit: 3 seconds
Memory Limit: 512 Megabytes

Problem description

The RGB color model is an additive color model in which red, green and blue light are added together in various ways to reproduce a broad array of colors. The name of the model comes from the initials of the three additive primary colors, red, green, and blue. RGB color model is popular used to store digital images in computer memory.

HSV – (hue, saturation, value), also known as HSB (hue, saturation, brightness), is often used by artists because it is often more natural to think about a color in terms of hue and saturation than in terms of additive or subtractive color components. HSV is a transformation of an RGB colorspace, and its components and colorimetry are relative to the RGB colorspace from which it was derived.

We can convert a RGB color value stored in memory to a HSV color values by applying following algorithm:

1. divide r, g, b by 255.
2. compute cmax, cmin, difference (diff) between cmax and cmin. Where cmax is the maximum of r, g, b and cmin is the minimum of r, g, b.
3. calculate Hue value:
 - if cmax and cmin equal 0, then $h = 0$
 - if cmax equal r then compute $h = (60 * ((g - b) / \text{diff}) + 360) \% 360$
 - if cmax equal g then compute $h = (60 * ((b - r) / \text{diff}) + 120) \% 360$
 - if cmax equal b then compute $h = (60 * ((r - g) / \text{diff}) + 240) \% 360$
4. calculate Saturation:
 - if cmax = 0, then $s = 0$
 - if cmax does not equal 0 then compute $s = (\text{diff} / \text{cmax}) * 100$
5. calculate Value:

$$v = \text{cmax} * 100$$

Create a program to convert a RGB value to HSV value

Input

A line contains 3 integers r, g, b corresponding to red, green, blue color channel value separated by space where $0 \leq r, g, b \leq 255$.

Output

A line contains 3 values corresponding to hue (h), saturation (s) and value (v). Where h is an integer and $0 \leq h \leq 360$, s and v are decimal values which have an absolute or relative error of less than 10^{-1}

Example:

Input	Output
34 50 66	210 48.5 25.9

Input	Output
255 255 255	0 0.0 100.0

Input	Output
0 0 0	0 0.0 0.0