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Say That Again?

9 points

Introduction

AI1-C3 and B-0b are two friendly robots that wish to establish a communication protocol with some redundancy to avoid miscommunication. As they are robots, they do not communicate by words but rather with bytes (8-bit numbers) represented by integer numbers from 0 to 255. For their protocol, they came up with the simple idea to repeat each of the bytes in the message three times, so that the received byte is formed by the most common bit at each of the 8 positions within the byte.

For example, if the bytes are 24, 117 and 178, then the resulting byte is 48:

n	b7	b6	b5	b4	b3	b2	b1	b0
24	0	0	0	1	1	0	0	0
117	0	1	1	1	0	1	0	1
178	1	0	1	1	0	0	1	0
48	0	0	1	1	0	0	0	0

Please, help AI1-C3 and B-0b implement the program that translates the repeated bytes into the final byte on the receiving end.

Input

Several lines, each containing a triplet of bytes (separated by a single space), except the last line that contains only the character '#'. Bytes are represented by an integer number between 0 and 255 (both inclusive).

Output

One line for each triplet of bytes with the final byte according to the protocol described above. Bytes are represented by an integer number between 0 and 255 (both inclusive).





Example 1

Input

24 117 178

3 3 0

1 2 3

#

Output

48

3

3

Example 2

Input

4 4 2

0 0 0

255 127 128

4 2 8

#

Output

4

0

255

0