ACSL

2010 - 2011 **American Computer Science League** **Contest #1**

Junior Division
ACSL Prints

PROBLEM: The Henry Classification System for finger prints was developed by Sir Edward Henry in the late 1880's. The system is based upon the pattern of lines that appear on each finger. There are three basic patterns: the Arch, the Loop and the Whorl. Surprisingly, just the Whorl pattern is used in the classification system.

If you place your hands, palms down, on a surface, the Henry system labels the left pinky to the left thumb with the numbers 10 through 6. The right thumb through the right pinky are numbered 1 through 5. Each finger is given a Whorl number as shown in the following table:

Finger	10	9	8	7	6	1	2	3	4	5
Whorl numbers	1	1	2	2	4	16	16	8	8	4

A value called the Primary Group Ratio is calculated as follows:

$$\frac{1 + \text{sum of whorled even finger numbers}}{1 + \text{sum of the whorled odd finger numbers}}$$

If a whorl is detected on fingers 8, 7 and 2 the calculation would give:

$$\frac{1+2+16}{1+2} = \frac{19}{3}$$

INPUT: There will be 5 lines of input. Each line will give the finger numbers where whorls occur. Each line will end with a zero which means no other data will follow. A data line with just a zero means that no Whorls occurred. The Primary Group Ratio would be $\frac{1}{1}$ in that case.

OUTPUT: For each Input line print the Primary Group Ratio.

SAMPLE INPUT	SAMPLE OUTPUT
1. 8, 7, 2, 0	1. 19/3
2. 0	2. 1/1

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TEST DATA

TEST INPUT	**TEST OUTPUT**
1. 1, 3, 6, 8, 0	1. 7 / 25
2. 1, 3, 5, 7, 9, 0	2. 1 / 32
3. 2, 4, 5, 6, 0	3. 29 / 5
4. 2, 4, 6, 8, 10, 0	4. 32 / 1
5. 4, 0	5. 9 / 1