

Conversions

Conversion between the metric and English measurement systems is relatively simple. Often, it involves either multiplying or dividing by a constant. You must write a program that converts between the following units:

Type	Metric	English equivalent
Weight	1.000 kilograms	2.2046 pounds
	0.4536 kilograms	1.0000 pound
Volume	1.0000 liter	0.2642 gallons
	3.7854 liters	1.0000 gallon

Input

The first line of input contains a single integer N , ($1 \leq N \leq 1000$) which is the number of datasets that follow.

Each dataset consists of a single line of input containing a floating point (double precision) number, a space and the unit specification for the measurement to be converted. The unit specification is one of kg, lb, l, or g referring to kilograms, pounds, liters and gallons respectively.

Output

For each dataset, you should generate one line of output with the following values: The dataset number as a decimal integer (start counting at one), a space, and the appropriately converted value rounded to 4 decimal places, a space and the unit specification for the converted value.

Example

Input:

```
5
1 kg
2 l
7 lb
3.5 g
0 l
```

Output:

```
1 2.2046 lb
2 0.5284 g
3 3.1752 kg
4 13.2489 l
5 0.0000 g
```