7795 What's a Cubit?

In ancient Egyptian and Biblical times, length measurements were based on the human body: a digit was the width of a finger, four digits made a palm, and seven palms made a cubit (presumably the length of an outstretched forearm from the elbow to the middle finger).

Egyptian cubit rods have been found, with lengths of 523.5 to 529.2 mm (20.61 to 20.83 inches). These were apparently standardized "royal" cubits. The rods are divided into palms, with the palms subdivided into digits.

Using the mean length of the cubit as 526.35 mm, your team is to write a program that will take ancient dimensions in cubits, palms, and digits, and print the results both in meters and in U. S. feet and inches. A U. S. inch is defined as 25.4 mm, with twelve inches to the foot.

Input

Input to your program will be a series of lines. Each line will contain an ancient measurement specified as integers followed by units, of the form 'a `cubits` b `palms` c `digits`'. If the value for the number of cubits, palms, or digits is zero, it will be omitted in the input. If the value is one, the unit will be specified in the singular. Fields on an input line are separated by one or more spaces. No input line will exceed 80 columns. Lengths will be greater than zero and less than 1,000 cubits.

Output

For each input line, your program is to print the length in meters (rounded to three digits after the decimal point) followed by the letter 'm'. This is to be followed by a single space and the length in feet and inches. If the length is less than one foot print only the inches; otherwise, print the number of feet as an integer immediately followed by a single quote and a space. The number of inches are then to be printed with two digits after the decimal point (rounded), and immediately followed by a double quote. No leading or trailing whitespace is to appear on an output line.

Sample Input

```
300 cubits
2 cubits 1 palm 2 digits
3 palms 3 digits
1 cubit 2 digits
```

Sample Output

```
157.905m 518' 0.73"
1.165m 3' 9.89"
0.282m 11.10"
0.564m 1' 10.20"
```