

Imperial Measurement


Problem ID: measurement**CPU Time limit:** 1 second**Memory limit:** 1024 MB**Difficulty:** 2.0

The traditional imperial system has eight units of distance (excluding maritime units and some units used in surveying), related as follows:

thou (th)	
inch (in)	1000 thous
foot (ft)	12 inches
yard (yd)	3 feet
chain (ch)	22 yards
furlong (fur)	10 chains
mile (mi)	8 furlongs
league (lea)	3 miles



Photo by William Warby (wwarby) on flickr

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Given a distance measured in one of these units, can you figure out what it will be in another unit?

Input

The input consists of a single line of the form “ v u in \tilde{u} ”, where $1 \leq v \leq 100$ is an integer amount and u, \tilde{u} are any of the units listed above, indicating that we are converting v u ’s into \tilde{u} ’s. Units are given either by their full name or by their acronym, but will always be given in singular using only lower case letters.

Output

Output the distance converted into \tilde{u} . You do not need to worry about the precise formatting of the answer (e.g., number of decimals), but either the absolute error or the relative error of your output must be smaller than 10^{-9} .

Sample Input 1

42 ft in inch

Sample Output 1

504

Sample Input 2

10 furlong in lea

Sample Output 2

0.41666666666667