Last super-last one P95909_en

Professor Oak is very strict. However, his two nieces are not aware of this fact. So, when he says "últim" (Catalan word for "last one"), this means in practice "not the last time" (that his nieces are doing whatever they are doing). When he says "superúltim", this means "maybe the last time" (with probability ℓ_1, typically small). And when he says "últimsuperúltim", this also means "maybe the last time" (but with probability $\ell_2 > \ell_1$).

Supose that Prof. Oak says "últim", "superúltim" and "últimsuperúltim" with independent probabilities p_1, p_2 and $p_3 = 1 - p_1 - p_2$, respectively, until their nieces stop. How many phonemes will Prof. Oak need to say on the average? Take into account that, for all those Catalan words, each letter corresponds to one phoneme.

Input

Input consists of several cases, each one with the probabilities ℓ_1, ℓ_2, p_1 and p_2. Assume $0 < \ell_1 < \ell_2 \leq 1$, $0 \leq p_1 < 1$, $0 \leq p_2 \leq 1$, and $p_1 + p_2 \leq 1$.

Output

For every given case, print with three digits after the decimal point the expected number of phonemes said by Prof. Oak. The input cases do not have precision issues.

Sample input 1

```
0.5 1 0 0
0.2 0.6 0.6 0.3
```

Sample output 1

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15.000
62.500
```

Problem information

Author: Salvador Roura

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