



Problem C. Agonistic interaction

Input file: standard input
Output file: standard output
Time limit: 2 seconds

When two or more species have access to the same resource, ecological conflict can occur, leading in some cases to one species taking control of the resource and the extinction of all other species. Suppose that three species A, B and C are competing for a territory. We want to determine the probability that species X will take over the territory ($X \in \{A, B, C\}$) under the following assumptions.

1. The three species conflict takes the form of a series of interactions between exactly two random individuals. The interacting individuals may belong to different species or to the same species
2. Each pair of individuals can interact equiprobably
3. If two interacting individuals belong to the same species, nothing happens
4. If two interacting individuals belong to different species, they will fight until one of them dies. Exactly one individual dies in a fight
5. An individual of species B (resp. C, A) dies in a fight against an individual of species A (resp. B, C) with probability p (resp. q, r)
6. A species will take over the territory only when the other two are extinct

Given the number of individuals of each species and the probabilities p, q and r . Calculate the probability that species X will take over the territory after a random period of time ($X \in \{A, B, C\}$).

Input

The first line of the input contains three integers a, b and c ($0 \leq a, b, c \leq 100, a + b + c > 0$) indicating the number of individuals in species A, B and C respectively.
The second line contains three real numbers p, q and r ($0 \leq p, q, r \leq 1$)— indicating the probabilities as described in assumption 5.

Output

Print three space-separated real numbers: the probabilities of species A, B , and C taking over the territory, respectively. The answer will be considered correct if the relative or absolute error of each number doesn't exceed 10^{-9} .



Example

| Standard input | Standard output |
|--------------------|----------------------------------|
| 1 0 1 0.5 0.5 1 | 0 0 1 |
| 2 2 2 1 1 1 | 0.33333333 0.33333333 0.33333333 |