

Morning ECO, Evening EMO

Input file: standard input
Output file: standard output
Time limit: 1 second
Memory limit: 256 megabytes

Counter-Strike: Global Offensive (CSGO) is a popular first-person shooter game featuring a classic mode with two teams, terrorists and counter-terrorists, each comprising five players. In this mode, a round concludes only when all five players on one side are eliminated or the round's time expires.

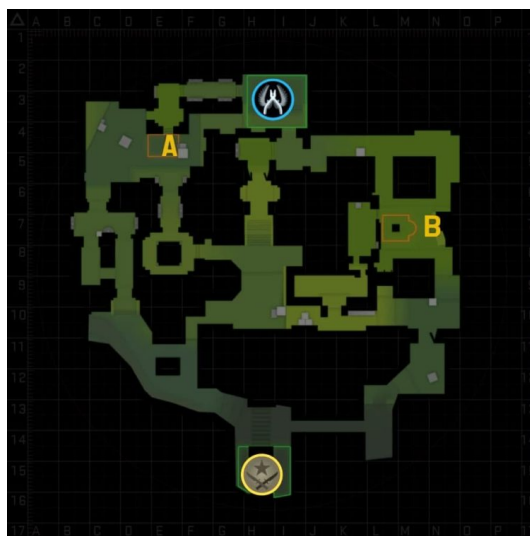


Рис. 1: A map named Ancient in CSGO

The game map contains two sites, Site A and Site B, which need to be attacked or defended. As the coach of a team, you are provided with the probability of each player on your team choosing to visit Site A or Site B, as well as the probability of each player on the enemy team choosing Site A or Site B. Players who visit the same site will be randomly ordered in a lineup. Players will encounter the enemy team solely at these sites and engage in one-on-one battles in the order of their lineup. You are also given the probability that the i -th player on your team beats the j -th player on the enemy team, denoted as P_{ij} . When a player is defeated, the subsequent player in the lineup takes their place. Players will remain at their chosen site and not switch between the two for the duration of the round.

Teams have time to purchase weapons and equipment before each round begins. Eliminating an enemy player yields a fixed monetary reward of C , while dying incurs no monetary loss. If all players on a team are killed in a round and each player's remaining funds before the subsequent round are less than or equal to K , the team will opt for an ECO strategy, not purchasing any weapons or equipment and using only the default weaponry.

In addition to the probabilities mentioned above, you are also provided with the remaining funds of each player on your team after buying weapons and equipment. As the team's coach, your task is to determine the probability that your team will select the ECO strategy in the next round

Input

The first line contains two positive integers C and K ($1 \leq C, K \leq 10^8$).

The second line contains five real numbers p_1, p_2, p_3, p_4, p_5 ($0 \leq p_i \leq 1$), representing the probability of each player on your team choosing Site A (the probability of choosing Site B is $1 - p_i$).

The third line contains five real numbers q_1, q_2, q_3, q_4, q_5 ($0 \leq q_i \leq 1$), representing the probability that each player on the enemy team choosing Site A (the probability of choosing Site B is $1 - q_i$).

The fourth line contains five positive integers x_1, x_2, x_3, x_4, x_5 ($0 \leq x_i \leq 10^8$), representing the remaining

funds of each player of your team.

The next five lines contain a 5×5 matrix of real numbers P ($0 \leq P_{ij} \leq 1$). The number in i -th row and j -th column P_{ij} represents the winning probability of the i -th player on your team against the j -th player on the enemy team in a one-on-one fight.

All real numbers are given with at most 2 decimal places.

Output

Output a single real number representing the probability that your team will choose to ECO in the next round. Your answer will be considered correct if its relative or absolute error does not exceed 10^{-6} , i.e. $\frac{|a-b|}{\max(1,b)} \leq 10^{-6}$ if your answer is a and the correct answer is b .

Examples

standard input	standard output
200 300 1 1 1 1 1 1 1 1 1 1 10 10 10 10 101 0.1 0 0 0 0 1	0.810000000000
300 2000 0.5 0.9 0.3 0.4 0.2 0.9 0.8 0.9 0.7 0.9 1000 1200 1800 1900 500 0.3 0.2 0.3 0.5 0.3 0.1 0.2 0.5 0.2 0.1 0.1 0.8 0.1 0.1 0.2 0.1 0.2 0.3 0.2 0.5 0.2 0.1 0.4 0.5 0.2	0.203492421142