Problem F.
Will You Save Us?

Time limit: 1 second

You, the hero, are going to fight with the final boss of the world, Irisu. As a hero, you have three character "abilities": Body B, Mind M, and Intelligence I, where the overall strength S is calculated as the geometric mean of these abilities. In other words, $S = \sqrt[3]{BMI}$. Unfortunately, because you failed the last battle against the boss, all your abilities are zero now.

To beat Irisu, your overall strength should satisfy a mysterious inequality $(S+5)(S+1)(S+4) \geq X$ on the elder scroll you found in a huge tomato after the last battle. The only way you can increase the abilities is to buy ability potions from the dark alchemist, Skyly. There are $N_B + N_M + N_I$ potions which Skyly is selling. The first N_B ones are Body Potions, the following N_M ones are Mind Potions, and the last N_I ones are Intelligence Potions. The i-th potion would cost you P_i dollars and increase the corresponding ability by E_i points.

To save both the world and the wallet, you want to find the minimum total price you need to spend for the ability potions to beat the final boss.

Input

The first line contains four integers X, N_B, N_M, N_I, and the i-th line of the following $N_B + N_M + N_I$ lines contains two integers P_i, E_i.

- $0 \leq X \leq 10^9$
- $0 \leq N_B, N_M, N_I \leq 30$
- $0 \leq P_i, E_i \leq 10^9$ for all $1 \leq i \leq N_B + N_M + N_I$

Output

Please output the minimum total price you need to spend for the ability potions to beat the final boss. If you are still not strong enough even you bought all the potions from Skyly, please output "`DEAREST DROP`".

Sample Input	Sample Output
31 4 1 5 9 2 6 5 3 5 8 9 7 9 3 2 3 8 4 6 2 6 4 3	12

Sample Input	Sample Output
5566 2 1 0 0 999999999 999999999 0 0 0	DEAREST DROP

Sample Input	Sample Output
50216 2 2 2 1 20 1 30 10 42 20 43 15 18 17 19	29