Problem K
Washer
Time Limit: 1 Second

You have n clothes and a washer. The washer is large enough to wash all clothes at once. However, we should worry about the color transfer: if we put clothes of different colors in the washer, the dye from one may stain another. Precisely, let r_i, g_i, b_i denote the amount of red, green, blue color of the i-th clothes. When n clothes are washed together, the *color transfer* c is defined by

$$c = \sum_{i=1}^{n} (r_i - r)^2 + (g_i - g)^2 + (b_i - b)^2$$

where r, g, and b are the averages of r_i, g_i, and b_i, respectively. The i-th clothes with r_i, g_i, and b_i is defined as a point (r_i, g_i, b_i) in 3-dimensional RGB space. You can assume that no three points (clothes) are on a same line and no four points (clothes) are on a same plane in RGB space.

The washer consumes a lot of electricity, and you have to partition n clothes into at most k groups, and run the washer for each group. The total color transfer is the sum of color transfers from each run. Given the color information of n clothes and k, write a program to calculate the minimum total color transfer.

Input
Your program is to read from standard input. The first line contains two integers n ($1 \le n \le 100$) and k ($1 \le k \le 2$). In the following n lines, the i-th line contains three integers r_i, g_i, b_i ($0 \le r_i, g_i, b_i \le 1{,}000$).

Output
Your program is to write to standard output. Print exactly one line containing the minimum total color transfer, rounded to the sixth decimal point.

Sample Input 1	Output for the Sample Input 1
2 1 36 16 85 74 87 38	4347.000000

Sample Input 2	Output for the Sample Input 2
1 2 12 26 90	0.000000

Sample Input 3	Output for the Sample Input 3
3 2 93 50 26 40 0 77 99 10 29	822.500000