k-means I

Task: Given a set of points P in $\mathbb{R}^2$ with integer coordinates, compute the sum of the squared lengths of all points in P, i.e., $\sum_{x \in P} ||x||^2$. The length of a point $x = (x_1, x_2) \in \mathbb{R}^2$ is defined as $\sqrt{x_1^2 + x_2^2}$.

Input: The first line contains the number of points n. The next n lines contain one point per line. Each point is specified by two integers, separated by a space, and the integers lie between -10000 and 10000. The cardinality of P is at most 10000.

Output: A line containing $\sum_{x \in P} ||x||^2$, with 30 positions after the decimal point (and without rounding errors in these 30 positions).

Sample Input:

```
4
1 1
1 -1
-1 1
-1 -1
```

Sample Output:

```
8.000000000000000000000000000000
```