Project Euler #99: Largest exponential

This problem is a programming version of Problem 99 from projecteuler.net

Comparing two numbers written in index form like 2^{11} and 3^7 is not difficult, as any calculator would confirm that $2^{11} = 2048 \lt 3^7 = 2187$.

However, confirming that $632382^{518061} \gt 519432^{525806}$ would be much more difficult, as both numbers contain over three million digits.

You are given N base exponent pairs, each forming a large number you have to find the K^{th} smallest number of them. K is $1 - indexed$.

Input Format
First line containts an integer N, number of base exponent pairs. Followed by N lines each have two space separated integers B and E, representing base and exponent.
Last line containts an integer K, where $K<=N$

Constraints
$1 \le N \le 10^5$
$1 \le K \le N$
$1 \le B \le 10^{9}$
$1 \le E \le 10^{9}$
No two numbers are equal.

Output Format
Print the base and exponent in one line separated by space.

Sample Input

```
3
4 7
3 7
2 11
2
```

Sample Output

```
3 7
```