Summer Sale

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

You own a Gift Shop. For this summer, you have a plan for the following n days. For each day sales, you know that exactly on i-th day gi products will put up for sale, and exactly ci customers will come to the shop that day. You have established the following rule:

1. For each day, who comes to the shop buys exactly one product.
2. If there is not any product left, they leave without buying anything.
3. If some part of the products is left at the end of the day, that products aren't kept on the next day and they are sent to the dump.

To boost your sale you have to choose any d days from n. On each of d chosen days, the number of products that were put up for sale would be doubled i.e. you put 2*gi products for sale on that day.

Your task is to choose d days to maximize the total number of sold products.

Input

The first line contains two integers n and d denoting the number of days in the sale plan and the number of days that you have to choose to boost your sale.
Each line of the following n subsequent lines contains two integers gi, ci denoting the number of products of the shop on the i-th day and the number of customers that will come to the shop on i-th day.

$1 <= n <= 10^5$,
$0 <= d <= n$,
$0 <= g_i, c_i <= 10^9$

Output

Print a single integer denoting the maximal number of products that you can sell.

Examples

standard input	standard output
4 2 2 1 3 5 2 3 1 5	10
4 1 0 2 0 3 3 5 0 6	5

Note

The final answer can be big, so use Long.