Problem K. Lopov

Source file name:	lopov.c, lopov.cpp, lopov.java
Input:	`Standard`
Output:	`Standard`

The difficult economic situation in the country and reductions in government agricultural subsidy funding have caused Mirko to change his career again, this time to a thief. His first professional endeavour is a jewellery store heist.

The store contains **N** pieces of jewellery, and each piece has some mass $\mathbf{M_i}$ and value $\mathbf{V_i}$. Mirko has **K** bags to store his loot, and each bag can hold some maximum mass $\mathbf{C_i}$. He plans to store all his loot in these bags, but **at most one** jewellery piece in each bag, in order to reduce the likelihood of damage during the escape.

Find the maximum total jewellery value that Mirko can "liberate".

Input

The first line of input contains two numbers, **N** and $\mathbf{K}(1 \leq N, K \leq 300000)$. Each of the following **N** lines contains a pair of numbers, $\mathbf{M_i}$ and $\mathbf{V_i}$ $(1\mathbf{M_i}, \mathbf{V_i} \leq 1000000)$. Each of the following **K** lines contains a number, $\mathbf{C_i}(1 \leq \mathbf{C_i} \leq 100000000)$. All numbers in the input are positive integers.

Output

The first and only line of output must contain the maximum possible total jewellery value.

Example

Input	Output
2 1 5 10 100 100 11	10
3 2 1 65 5 23 2 99 10 2	164

Explication

Clarification of the second example: Mirko stores the first piece of jewellery into the second bag and the third piece into the first bag.