

Problem L: Legendary LAN-Party

Time limit: 2 seconds

You want to throw a LAN-Party for your m best friends. You already bought n switches with m LAN-ports in total. However, only after you paid for them you realized your mistake. You cannot connect m people with those switches, since the switches themselves need to be connected. Luckily, your switches support *Power-line communication* (PLC), a technology which allows the switches to access the internet over their power cord. Even better, you also have n sockets for your power supply which support PLC. Therefore, the only things you need to buy are the power cords for the switches.

For your party, you want to place all the switches along a line, starting with the first switch at position 1. The next switch would be placed right after it at position $m_1 + 1$, assuming the previous switch has m_1 ports. You can assume that a switch with m_i ports is also m_i centimeter long.

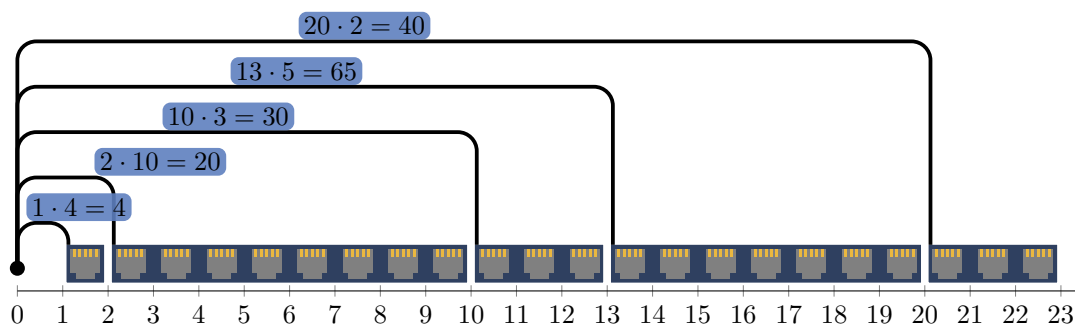


Figure L.1: Visualization of Sample Input 1. The cable length is the horizontal distance between the socket at 0 and the start of the switch. The total sum of the costs is 159.

Since all your sockets are at position 0, you need a 1cm cable for the first switch, a $(m_1 + 1)$ cm cable for the second switch and so on. Unfortunately, the costs of the cables vary for different switches. Obviously, you do not want to pay too much for these cables. Since the order of the switches does not matter, you want to know how much you need to pay to connect all switches?

Input

The input consists of:

- One line with two integers n and m ($1 \leq n \leq 2 \cdot 10^5, 1 \leq m \leq 10^6$), the number of network switches and the total number of ports.
- n lines, each with two integers c and m ($1 \leq c, m \leq 10^6$), the cost for one centimeter of power cable and the number of ports for each switch.

Output

Print a single integer, the minimum total cost to connect all switches.

Sample Input 1**Sample Output 1**

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5 22  
5 7  
2 3  
4 1  
3 3  
10 8
```

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159
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