High Profit Only

https://szkopul.edu.pl/problemset/problem/hpo/site

Year of success

The company "High Profit Only" (HPO) wants to invest a lot next year. Anyhow they want to achieve the best possible ROI (Return of Investment).

Which projects?

HPO needs to choose projects that it will implement next year. In each project HPO can invest only once.

Profit Only

HPO wants to choose projects that gives the maximum profit. Can you help HPO and calculate what the maximum profit can be achieved?

Input

First line contains 2 numbers:

$1 \le m \le 30\ 000$ (amount of money HPO wants to invest)

$1 \le n \le 200$ (number of projects)

In the next n lines there are numbers defining each of n project:

$1 \le i \le 30\ 000$ (amount of money HPO needs to invest in this project)

$1 \le p \le 10\text{\textasciicircum}9$(profit from the project)

Output

Your program shall print just 1 number:

Maximum profit that HPO can achieve if investing no more than m dollars

Example 1

Input

5 6	*(HPO has $5 to invest, there are 6 projects)*
2 4	*(project #1: $2 to invest, $4 profit)*
4 3	*(project #2: $4 to invest, $3 profit)*
1 8	*(project #3: $1 to invest, $8 profit)*
2 1	*(project #4: $2 to invest, $1 profit)*
1 1	*(project #5: $1 to invest, $1 profit)*
2 5	*(project #6: $2 to invest, $5 profit)*

Output

17

Explanation

HPO can invest its $5 in projects: #1 ($4 profit), #3 ($8 profit), #6 ($5 profit) achieving total profit $17. This is maximum profit that HPO can achieve investing its $5.

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