(Adv.) Competitive Programming

Submit until end of contest, via the judge interface

Problem: hotdog (1 second timelimit)

Since you always wanted to have a world record, you made the longest hot dog that was ever created. It was a lot of work and very expensive, but you succeeded, so it was definitely worth it. However, after you and all of your friends ate some of it, you now have a huge problem. Or rather a very long problem. There is still a lot left over. Like really... your roommates already complained about not being able to enter the kitchen anymore.

Luckily, there is a solution. There is the World Record Food Reuse Agency which buys food from world record attempts for reasonable prices to resell it. They have a special price table for hot dogs, which they buy based on length. An entry (m, p) in this table means you can sell m meters of hot dog for p real money units.

The price table is set up, so that you can never sell a shorter piece for more than a longer piece. The challenge for you is, given the hot dog and pricing table, to decide how to cut the hot dog to maximize your revenue.

Input The first line contains t ($0 \leq t \leq 1000000$) and k ($0 < k \leq 200$) the length of the hot dog in meters and the number of entries in the pricing table. Then follow k lines containing two integers m ($0 < m \leq t$) and p ($0 < p < 2^{32}$), the length and price of a piece of hot dog you may sell. An entry for a single meter of hot dog is always included.

Output Print the maximum revenue you can achieve.

Sample input

```
9 5
2 5
1 1
6 17
3 8
8 23
```

Sample output

```
25
```