



COMPETITIE

PROG-A-THON

4: Selling Laptops

Level: intermediate

Time limit: 1.000 seconds

You recently started working for a laptop factory, and after working there for one year, your boss has given you a bunch of identical laptops as a bonus.

Since having many identical laptops on your own is not really useful, you would like to sell the laptops. Since selling laptops to individuals is a lot of work, you revert to selling them to laptop stores, since stores would generally want to buy more than one laptop. Unfortunately, the market has some restrictions: you are only allowed to trade with each store once. Each store has its own price for every amount of laptops. You want to determine how many laptops to sell to each store to maximize your profit.

Input

The input consists of:

- One line with the integers ℓ and s ($1 \leq \ell, s \leq 100$), where ℓ is the number of laptops you can sell and s is the number of stores.
- s lines with the prices of each store store. Each line consists of:
 - ℓ integers p_1, \dots, p_ℓ ($1 \leq p_i \leq 10^5$ for all $1 \leq i \leq \ell$), where p_i is the amount of money you receive if you sell i laptops to this store.

Output

Output the maximum amount of money that you can make when selling the laptops. Note that you do not have to sell all laptops.

Sample input 1

```
5 3  
1 6 14 1 1  
1 1 5 1 1  
1 1 9 1 1
```

Sample output 1

```
16
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