

Maximum Profit

CS&T, the well-known cellphone company, is going to set some new service stations among n possible ones, which are numbered $1, 2, \dots, n$. The costs of setting these stations are known as P_1, P_2, \dots, P_n . Also the company has made a survey among the cellphone users, and now they know that there are m user groups numbered $1, 2, \dots, m$, which will communicate by service station A_i and B_i , and the company can profit C_i .

Now CS&T wants to know which service stations are to be set that the company will profit most.

Input

T [The number of tests]
n m [$n \leq 5000$ $m \leq 50000$]
P1 P2 P3 ... Pn [$P_i \leq 100$]
A1 B1 C1
A2 B2 C2
...
Am Bm Cm [$1 \leq A_i, B_i \leq n$, $C_i \leq 100$]
[other tests]

At least 80% of the tests satisfy that $n \leq 200$, $m \leq 1000$.

Output

MaximumProfit
[other tests]

Example

Input:

```
1
5 5
1 2 3 4 5
1 2 3
2 3 4
1 3 3
1 4 2
4 5 3
```

Output:

```
4
```

Hints:

The service stations to be set are 1,2,3.