

A kingdom has n cities numbered 1 to n , and some bidirectional roads connecting cities. The capital is always city 1.

After a war, all the roads of the kingdom are destroyed. The king wants to rebuild some of the roads to connect the cities, but unfortunately, the kingdom is running out of money. The total cost of rebuilding roads should not exceed K .

Given the list of m roads that can be rebuilt (other roads are severely damaged and cannot be rebuilt), the king decided to maximize the total population in the capital and all other cities that are connected (directly or indirectly) with the capital (we call it “accessible population”), can you help him?

Input

The first line of input contains a single integer T ($T \leq 20$), the number of test cases. Each test case begins with three integers n ($4 \leq n \leq 16$), m ($1 \leq m \leq 100$) and K ($1 \leq K \leq 100,000$). The second line contains n positive integers p_i ($1 \leq p_i \leq 10,000$), the population of each city. Each of the following m lines contains three positive integers u, v, c ($1 \leq u, v \leq n, 1 \leq c \leq 1000$), representing a destroyed road connecting city u and v , whose rebuilding cost is c . Note that two cities can be directly connected by more than one road, but a road cannot directly connect a city and itself.

Output

For each test case, print the maximal accessible population.

Sample Input

```
2
4 6 6
500 400 300 200
1 2 4
1 3 3
1 4 2
4 3 5
2 4 6
3 2 7
4 6 5
500 400 300 200
1 2 4
1 3 3
1 4 2
4 3 5
2 4 6
3 2 7
```

Sample Output

```
1100
1000
```