Problem HEISENBERG: Heisenberg Uncertainty Principle

Maybe you have heard of the *Heisenberg Uncertainty Principle* before. It states that some pairs of physical properties, like position and momentum, cannot both be known with arbitrary precision.
This principle can be extended for the prediction of the appearance of aliens and monsters. You may predict either the location **or** the time of the appearance exactly. The other property is only known with a certain fuzziness.

Currently, you are searching for a habitable planet outside of your solar system. One characteristic number for habitable planets is the chance of a simultaneous appearance of aliens and monsters (less is better). We already tried to predict the locations and times of the appearances. But as you now know, we cannot get those two properties simultaneously. However, we are able to predict the exact location for every alien and the exact time for every monster. Please help us to determine the number of possible clashes between aliens and monsters.

Input

The first line of the input gives the number of planets ($0 < p < 100$) that need to be investigated. Each of the planet descriptions starts with two numbers on one line: a and m, the number of aliens and monsters, respectively ($0 < a, m < 20\,000$). Then follows a lines, three numbers $starttime_i$, $endtime_i$, and $location_i$[1] in each line representing the fuzzy timespan and the exact location for the ith alien ($starttime_i < endtime_i$). Afterwards follow m lines, three numbers $startloc_j$, $endloc_j$, and $time_j$ in each line representing the fuzzy location and the exact timespan for the jth monster ($startloc_j < endloc_j$). All times and locations are nonnegative integers less than $10\,000\,000$.

Output

For each planet, print one line containing the number of possible conflicts between aliens and monsters. You may assume that we have already filtered out the worst planets, i.e. there is no planet with more than $55\,555$ conflicts.

Sample Input 1

```
2
3 1
2 10 5
5 15 5
11 19 5
1 10 10
2 2
1 7 12
2 23 3
5 16 6
1 42 2
```

Sample Output 1

```
2
3
```

[1] Recently, a clever scientist found out how to map the three dimensions of space down to exactly one dimension.