The Scenic Route

You just got engaged and are planning the ultimate scenic road trip across Canada. You plan on taking the Trans-Canada Highway, Canada's longest national road, stretching from Victoria, BC to British Columbia, and ending in St. John's, Newfoundland and Labrador. It was once the world's longest uninterrupted highway when it opened in 1962. We represent the highway as a straight line with N distinct sections, indexed from 1 to N.

Figure 1: Photo by National Geographic

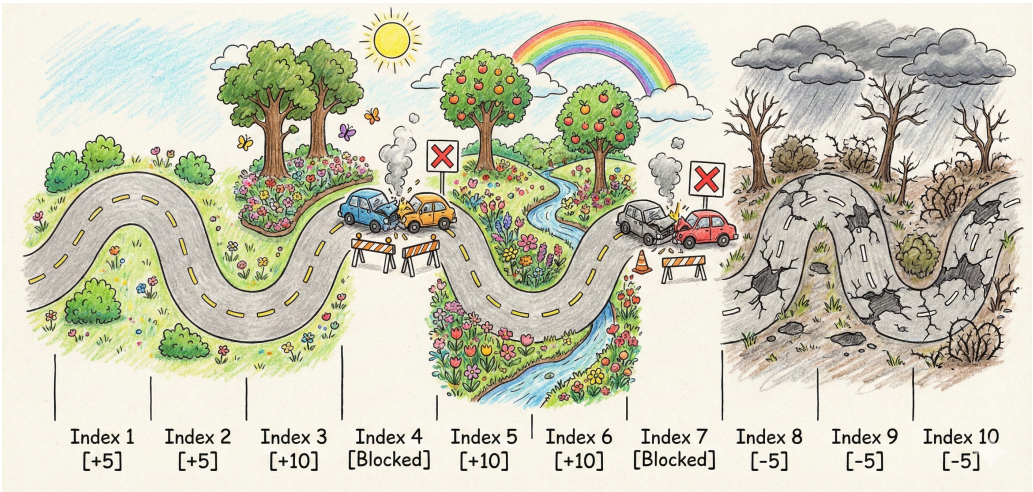
Initially, the highway is boring, with a "Scenic Value" of 0 for each section. However, before the tourist season begins, the Department of Transportation completes a series of M beautification projects. Each project targets a specific contiguous range of the highway $[L, R]$ and increases the Scenic Value of every section in that range by an integer V.

Once the Department finishes these projects, the highway is ready for travel. You start to plan your road trip, but you encounter an issue...

Unfortunately, because of the new beautification projects, an increased number of people have started driving on the highway. Due to this influx in traffic, accidents may occur at specific sections of the highway. An accident acts as a complete roadblock. You cannot drive through a section that has an accident, nor can you start or end your trip there. (You must start your trip at the next section or end it at the section before the accident)

The Trip Rule: You must choose a single contiguous segment of the highway to drive on. This segment must not contain any accidents. Your goal is to maximize the **Total Scenic Value** (the sum of values of all sections) of your trip.

The input provides the details of the beautification projects, followed by Q different traffic scenarios. For each scenario, you must calculate the maximum Total Scenic Value possible.



In this example, an accident at index 4 and 7 splits the road into three drivable segments: Indices $[1, 3]$, Index $[5, 6]$, and Index $[8, 8]$.

Figure 2: An accident at section i forces you to choose a segment entirely before i or entirely after i.

Input

The first line contains two integers N and M ($1 \leq N, M \leq 200\,000$), representing the length of the highway and the number of beautification projects.

The next M lines describe the projects. Each line contains three integers L, R, V:

- The range $[L, R]$ ($1 \leq L \leq R \leq N$) has its Scenic Value increased by V ($-1000 \leq V \leq 1000$).

Note: $[L, R]$ is inclusive. A negative V represents construction work that makes the scenery ugly.

The next line contains an integer Q ($1 \leq Q \leq 20\,000$), the number of traffic scenarios to analyze.
For each of the Q scenarios:

- The line contains K distinct integers $a_1, a_2, \ldots, a_K$ ($1 \leq a_i \leq 10$), representing the locations of the accidents.

Output

For each of the Q scenarios, output a single integer on a new line: the maximum Total Scenic Value obtainable on a single valid continuous drive.

If the best possible drive has a negative total value, you may still drive (output the negative sum). If each section is blocked, output `impossible`.

Sample Input 1 Sample Output 1

Sample Input 1

```
10 3
1 10 5
3 7 5
8 10 -10
3
4 7
5
1 2 3 4 5 6 7 8 9 10
```

Sample Output 1

```
20
30
Impossible
```

Explanation of Sample 1:

- **Step 1 (Highway Beautification):**
- Initially: $[0, 0, 0, 0, 0, 0, 0, 0, 0, 0]$
- Update 1 (1-10, +5): $[5, 5, 5, 5, 5, 5, 5, 5, 5, 5]$
- Update 2 (3-7, +5): $[5, 5, 10, 10, 10, 10, 10, 5, 5, 5]$
- Update 3 (8-10, -10): $[5, 5, 10, 10, 10, 10, 10, -5, -5, -5]$
- **Final Values:** $[5, 5, 10, 10, 10, 10, 10, -5, -5, -5]$

- **Scenario 1:** Accidents at $\{4, 7\}$.
- Blocked indices: 4 and 7.
- Highway: [5 | 5 | 10 | **X** | 10 | 10 | **X** | -5 | -5 | -5]
- Available Segments: $[1, 3]$, $[5, 6]$, $[8, 10]$.
- Sum $[1, 3] = 5 + 5 + 10 = 20$.
- Sum $[5, 6] = 10 + 10 = 20$.
- Sum $[8, 10] = -5 + -5 + -5 = -15$.
- Max is **20**
- Output: **20**

- **Scenario 2:** Accidents at $\{5\}$.
- Blocked indices: 5.
- Highway: [5 | 5 | 10 | 10 | **X** | 10 | 10 | -5 | -5 | -5]
- Available Segments: $[1, 4]$, $[6, 10]$
- Sum $[1, 4] = 5 + 5 + 10 + 10 = 30$.
- Sum $[6, 10] = 10 + 10 - 5 - 5 - 5 = 5$.
- Max is **30**
- Output: **30**

- **Scenario 3:** Accidents at $\{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$.
- Blocked indices: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.
- Highway: [**X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X**]
- Available Segments: *None*
- Output: `Impossible`