# Dora the Explorer

Dora wants to travel from one city to another as quickly as possible. However, she can’t resist exploring cities that she passes on her way to the destination. That’s why Dora needs you.

Write a program that finds the fastest path from one city to another keeping in mind that at each step Dora spends X minutes exploring the city.

## Input

* On the first, you will receive an integer – e – number of cities connections.
* On the next e lines, you will receive a connection in the following format: "{first city}, {second city}, {minutes}".
* On the next line, you will receive an integer – x – how many minutes Dora spends at each stop.
* On the next line, you will receive a **start city**.
* On the last line, you will receive an **end city**.

## Output

* Print the total time of the fastest path including the time Dora spends exploring in the following format: "Total time: {totalTime}".
* Print all cities that form the fastest path, each on a new line.
* Order of the output doesn’t matter.

## Constraints

* e will be in the range [1… 50].
* x will be in the range [1… 180].
* You can assume that there will be a path from the start city to the end city.
* You can assume that there will be only one fastest path at the end.

## Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 5  0, 6, 100  0, 8, 12  6, 4, 17  6, 5, 6  8, 5, 3  100  0  4 | Total time: 217  0  6  4 |
| 5  0, 6, 100  0, 8, 12  6, 4, 17  6, 5, 6  8, 5, 3  10  0  4 | Total time: 68  0  8  5  6  4 |