Island Hop

Agent Dave is on a mission in an archipelago of many small islands.

Every island in the archipelago is connected to every other island by a bridge with a toll.

Dave is emailed missions each day which tell Dave which island Dave needs to drive to and how much he is allowed to spend on tolls.

Dave wants to find the shortest path which he is able to take with the given budget each day.

Input:

Input begins with an integer n, the number of islands in the archipelago Dave is traveling through.

On the next line there is a single integer M, the total number of missions Dave will be given.

Next n lines follow with n integers (c_1, c_2, ..., c_n) each separated by a space. The integer number i on line j represents the toll in dollars of traveling from island j to island i.

Note: in all cases the cost of traveling from island i to island j is the same as the cost of traveling from island j to island i.

Next n lines follow with n integers (d_1, d_2, ..., d_n) each separated by a space. The integer number i on line j represents the distance in miles traveled over the bridge from island j to island i.

Note: in all cases the cost of traveling from island i to island j is the same as the cost of traveling from island j to island i.

Next M lines follow each with 3 integers: s, g, and b.

s = the island Dave is starting on for this mission (1 indexed).

g = the island Dave is instructed to travel to for this mission (1 indexed).

b = the amount of money Dave is allowed to spend on this mission.

Output:

For each Mission m, output on a new line the cost and distance of the shortest possible path on the given budget.

If a mission cannot be completed because there is not enough budget to reach the goal island, output -1.

Constraints:

n = 75

b <= 500

1 <= c <= 99

1 <= d <= 1000

Sample Input:

5

3

0 38 41 9 85

38 0 43 48 78

41 43 0 5 60

9 48 5 0 89

85 78 60 89 0

0 218 571 908 898

218 0 966 923 775

571 966 0 551 332

908 923 551 0 748

898 775 332 748 0

3 5 14

2 1 54

2 3 80

Sample Output:

-1

38 218

52 1677