* [Problem](https://9ed2aa78.widgets.sphere-engine.com/www?place_id=se-widget-09hh8mXRIS&sdk=1&activity=103167&se_uuid=64186d75-0f89-453a-a957-a8b7ee5e7a5a&custom_data=username%3DC64C7BBB39904BCE98A4755771692782%3Bround_id%3Db8bfd13c-e2db-4aa5-8fc5-2da0dffdda49%3Bchallenge_id%3D8b2e7489-2b2b-476d-9c00-c3ced98349d0" \l "problem-description)
* [Solve](https://9ed2aa78.widgets.sphere-engine.com/www?place_id=se-widget-09hh8mXRIS&sdk=1&activity=103167&se_uuid=64186d75-0f89-453a-a957-a8b7ee5e7a5a&custom_data=username%3DC64C7BBB39904BCE98A4755771692782%3Bround_id%3Db8bfd13c-e2db-4aa5-8fc5-2da0dffdda49%3Bchallenge_id%3D8b2e7489-2b2b-476d-9c00-c3ced98349d0#submit-code)
* [History](https://9ed2aa78.widgets.sphere-engine.com/www?place_id=se-widget-09hh8mXRIS&sdk=1&activity=103167&se_uuid=64186d75-0f89-453a-a957-a8b7ee5e7a5a&custom_data=username%3DC64C7BBB39904BCE98A4755771692782%3Bround_id%3Db8bfd13c-e2db-4aa5-8fc5-2da0dffdda49%3Bchallenge_id%3D8b2e7489-2b2b-476d-9c00-c3ced98349d0#sent-submissions)
* [Ranking](https://9ed2aa78.widgets.sphere-engine.com/www?place_id=se-widget-09hh8mXRIS&sdk=1&activity=103167&se_uuid=64186d75-0f89-453a-a957-a8b7ee5e7a5a&custom_data=username%3DC64C7BBB39904BCE98A4755771692782%3Bround_id%3Db8bfd13c-e2db-4aa5-8fc5-2da0dffdda49%3Bchallenge_id%3D8b2e7489-2b2b-476d-9c00-c3ced98349d0#users-ranking)

**Choose array optimally**

Problem Statement

Alice has N integer array each of size M. Alice want to choose some of the arrays out of these N arrays in such a way that if we calculate the sum of elements at the same index of all chosen array then the sum of elements at every position should be greater than or equal to X, i.e if we choose some of the arrays from these N arrays then the sum of elements at index i(for all 1<=i<=M) >= X. For choosing i-th(1<=i<=N) array you have to pay Ci rupees. Alice wants to know what is the minimum amount of money she is needed such that the given conditions are satisfied. Print the minimum possible amount of money she needed, If it is not possible to fulfill the given conditions then print -1.

Constraints • 1 <= t <= 10 • 1 <= N, M <= 14 • 1 <= Ci, X <= 10^6 • 0 <= A\_i j <= 10^6

Input Format

First-line contains a single integer t, the number of test cases. The first line of each test case contains three integers N, M, and X, the number of arrays, the size of each array, and the minimum sum needed at every position. The second line of each test case contains N positive integers, where i-th integer denotes that Ci rupees in needed to choosing i-th array. Next each of the N lines will contain M integers, i.e the elements of the array.

Output Format For each test case, output a single line— the minimum possible amount of money Alice needed, If it is not possible to fulfill the given conditions then print -1.

Sample Input

2 4 3 10 65 70 60 50 3 3 1 8 7 9 2 2 4 2 3 9 2 2 5 10 10 1 3 2 2

Sample Output

120 -1

Explanation of Sample

Test case 1:- If we choose the 2nd and 4th array i.e [8, 7, 9] and [2, 3, 9] then the sum of corresponding elements are [8+2, 7+3, 9+9] = [10, 10, 18] and we can see that sum at every index is greater than or equal to X=10 and for this we needed 70+50=120 rupees and we can prove that 120 rupees is the minimum possible money we need.

Test case 2:- If we choose both of the given arrays i.e [1, 3] and [2, 2] then the sum of corresponding elements are [1+2, 3+2] = [3, 5] and we can see that sum at index 1 is less than X=5 So here its is not possible to choose arrays such that sum at every position is greater than or equal to 5.