Employment Planning

Description

A project manager wants to determine the number of the workers needed in every month. He does know the minimal number of the workers needed in each month. He may fire or hire some workers in each month to reduce the payroll expenses. When he hires or fires a worker, there will be some pros and cons. Once a worker is hired, he will get the salary even if he is not working. And also there is extra cost for firing or hiring a worker, such as the insurance. The manager has already estimated the costs of hiring a worker, firing a worker, and the salary of a worker. But the manager confronts such a problem: how many workers he will hire or fire each month in order to keep the lowest total cost of the project such that the minimal number of workers is satisfied for each month.

Input

Input contains multiple test cases. Each test case contains three lines. First line contains an integer **N**, the number of the months of the project planned to use which is no more than 12. The second line contains three integers, the cost of hiring a worker, the amount of the salary and the cost of firing a worker. The third line contains **N** integers, which represent the minimal number of the workers needed each month. The input is terminated by a line containing a single '0'. All integers are no larger than 1,000

Output

For each test case, output contains one line with a single integer, the minimal total cost of the project.

Sample Input	Sample Output
3 4 5 6 10 9 11 0	199

Hints

For the first test case, the project manager will hire 10 workers in the first month, and hire one more worker in the last month, cost = (10*3*5+1*5) + (10+1)*4 = 199