

# The Wicked Employer

XYZ is a stingy employer who wants to maximize his profits by minimizing the salaries of his employees. Now he has to give appraisal to his employees based on their performance rating. Higher the performance rating higher the salary. The appraisal to be given for each employee should be a multiple of  $n$ . Assume that each employee knows the performance rating of his neighbour only. That is,  $i$ th employee knows the performance rating of  $i-1$  and  $i+1$ . (1st and last employees are not considered as neighbours). So if the performance rating of the  $i-1$ th employee or the  $i+1$ th employee is less than the  $i$ th then, their salary should be less than  $i$ 's by at least  $n$  and vice versa.

Given  $N$  employees, their performance rating ( $P[N]$ ) and the multiple  $n$ , find out the minimum total expenditure for the employer.

Input:

first line contains the multiple  $n$  ( $0 < n \leq 150$ )

second line contains the number of employees  $N$  following which is the performance rating of  $N$  employees. ( $0 < N \leq 60000$ )

Output:

Minimum expenditure

Example:

Input

10

4

1

4

6

2

Output:

70

Explanation: the appraisal for each person would be 10 20 30 10 respectively.

Example 2:

Input:

50

10

4

8

13

21

15

1

13

67  
8  
94

Output:  
1050

Explanation: the appraisal for each person would be 50 100 150 200 100 50 100 150 50 100 respectively.