Problem in Heritage

Story And Question

Number of M shareholders unite their shares in a poll at different dates. Assume share values are x1, x2, x3... xM at initial. After N years a shareholders share becomes sqrt(x^2+N).
Share holders number of years that in the poll and polls current total value are known, can you find total initial share values? (x1+x2+..xM)

Input Format:

First line contains an integer Q, denoting number of queries.
Next Q subsequent lines:
First line contains an integer M, denoting number of shareholders.
Next M subsequent lines contain an integer denoting a shareholders N.
Next line contains an integer denoting current total value of poll.

Constraints:

1<Q<5000
1<M<10000
1<N<10000

Output Format:

For each query output the total of x1+x2+x3...xM

Input:

```
1
3
1
4
9
10
```

Output:

```
8
```

Explanation: