Problem E: Garden Hopping

Filename: `garden`

Time limit: `1 second`

Grace has a magical garden with **n** stepping stones arranged in a line, numbered from 1 to **n**. Each stone has a certain energy cost to step on, given by an array cost[1..**n**]. Grace wants to cross the garden by stepping on stones starting from stone 1 and ending on stone **n**.

However, the garden is enchanted:

- Grace can jump from stone **i** to stone **j** only if **j** > **i** and (**j** - **i**) divides **i**. That means she can jump from stone **i** to any stone **j** such that (**j** - **i**) is a divisor of **i**.

For example, if Grace is on stone 6, she can jump to stones:

- 6 + 1 = 7 (since 1 divides 6),
- 6 + 2 = 8 (since 2 divides 6),
- 6 + 3 = 9 (since 3 divides 6),
- and so on, as long as j ≤ N.

Grace wants to minimize the total energy cost of all stones she steps on, including the first stone (stone 1) and the last stone (stone **n**).

The Problem

Given the array cost of length N, find the minimum total cost for Grace to reach stone **n** starting from stone 1 following the jumping rule.

The Input

The first line will consist of a single positive integer, **c**, representing the number of test cases to process. The first line of each test case contains a single integer, **n**, representing the number of stones in Grace's garden. The second line of each test case contains **n** space separated integers **cost[1], cost[2], …, cost[n],** representing the energy cost to step on each stone, respectively.

The Output

For each test case, print a single integer — the minimum energy cost to travel from stone 1 to stone **n**.

Input Bounds and Corresponding Credit

100 Points
• $1 \le \mathbf{c} \le 10$ • $2 \le \mathbf{n} \le 10^5$ • $1 \le \mathbf{cost[i]} \le 10^4$

Samples

Input	Output
2 10 5 2 3 1 10 4 2 7 6 1 8 4 8 2 5 6 3 1 7	16 24