The motivation for this problem is the game „Super Mario Bros“.

There are **N** platforms at the same altitude. Each platform has a given length - platform number **i** has length equal to **a[i]**. Mario can jump from one platform to another in the following way:

If Mario is currently on a **x**-length platform, he can jump to one of the next **x** platforms. Formally, if currently Mario is on platform number **i** currently, he can reach the platforms with numbers **i + 1, i + 2, ..., i + a[i]** with one jump.

Mario is interested in the **minimum number** of jumps is to get from one given **starting** platform to a another given **end** platform. In addition, he will make **Q** such queries.

Help Mario by writing a program that can answer his queries.

**Input**

The first line of the file jumps.in contains ***N***– the number of the platforms in Mario Land*.* The second like contains ***N***numbers ***a[1], a[2], ..., a[N] –*** the lengths of the platforms.

The third line contains the number ***Q***.

The **i**-th of the next ***Q***lines contains the integers ***x[i]*** and ***y[i]*** (***x[i]*** < ***y[i]***) – the staring and ending platforms for the corresponding query.

**Output**

In the output file jumps.out print ***Q***lines – the answers to the queries.

**Constraints**

$2\leq N\leq 10^{5}$

$1\leq Q\leq 10^{5}$

$1\leq a\left[i\right]\leq 10^{5}$

**Time limit: 1.2 sec**

**Memory limit: 256 MB**

**Examples**

|  |  |
| --- | --- |
| **Input (jumps.in)** | **Output (jumps.out)** |
| 51 5 1 3 151 52 33 54 51 2 | 21211 |
| 91 2 1 2 1 2 1 2 141 61 53 81 9 | 3335 |