



I • Caravan Trip Plans

Time Limit: 5 seconds

Memory Limit: 128MB

A *caravan route* is a sequence of camping locations a bit less than a day's travel apart. The camping locations can be either *dry* camps with little water or *oases* with plentiful water and perhaps fodder to animals. A *caravan trip* always starts and ends at an oasis and never goes back to a previous camp. A *caravan trip* is a destination oasis and a number of days to get there. For example, if the oases are at camps 2, 3, 5, 7, 11, etc. and the caravan wants to meet another caravan at camp 7 in 10 days, the caravan can wait 3 days and then go directly to camp 7, or leave now and wait 3 days at camp 7, or wait 1 day at each of camps 2, 3 and 5. A *caravan trip plan* is the choice of which camps to be at each night. For example, waiting 1 day at each of 2, 3, 5 gives a trip plan 1, 2, 2, 3, 3, 4, 5, 5, 6, 7.

Write a program which takes as input the locations of the oases on a *caravan route* and a *caravan trip* destination and number of days and outputs the number of *distinct trip plans*.

For example: with oases at camps 2, 3, 5, 7, 11, a 7 day trip to camp 5 has 10 trip plans as shown below (0 means rest at start).

```
0012345, 0122345, 0123345, 0123455, 1222345,  
1223345, 1223455, 1233345, 1233455, 1234555
```

Input

Input consists of multiple lines of input. The first line of input contains two space separated decimal integers **N** and **M**, where **N** is the number of oasis locations to be specified and **M** is the number of *caravan trips* for which the number of *trip plans* are to be found ($5 \leq N \leq 20$, $1 \leq M \leq 10$).

The second line of input contains **N** space separated decimal integers giving the number of days, **O_n**, to each oasis in increasing ($O_{n-1} < O_n$) order ($1 \leq O_n \leq 60$).

The remaining **M** input lines each contain two space separated decimal integers **D_m** and **T_m**, where **D_m** is the index of the destination oasis in the list and **T_m** is the number of days to get there: ($1 \leq D_m \leq N$, $O[D_m] \leq T_m \leq 60$)



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Output

There are M lines of output. The k -th output line contains a single decimal integer giving the number of distinct *trip plans* for a caravan over the route of camps in the second input line with the trip as specified in input line $k+2$.

Sample 1:

Sample Input	Sample Output
5 1	10
2 3 5 7 11	
3 7	

Sample 2:

Sample Input	Sample Output
8 3	10
2 3 5 7 11 13 17 19	126
3 7	1287
5 15	
8 24	