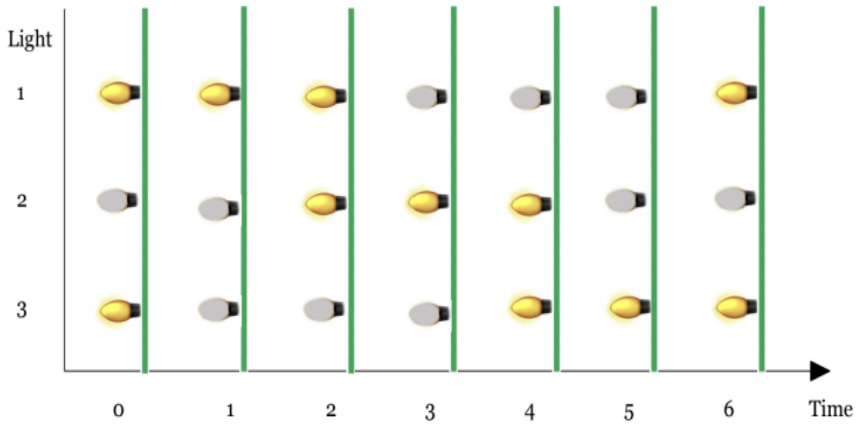
B. Koala and Lights

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

It is a holiday season, and Koala is decorating his house with cool lights! He owns n lights, all of which flash periodically.

After taking a quick glance at them, Koala realizes that each of his lights can be described with two parameters a_i and b_i. Light with parameters a_i and b_i will toggle (on to off, or off to on) every a_i seconds starting from the b_i-th second. In other words, it will toggle at the moments $b_i, b_i + a_i, b_i + 2 \cdot a_i$ and so on.

You know for each light whether it's initially on or off and its corresponding parameters a_i and b_i. Koala is wondering what is the maximum number of lights that will ever be on at the same time. So you need to find that out.



Here is a graphic for the first example.

Input

The first line contains a single integer n ($1 \le n \le 100$), the number of lights.

The next line contains a string s of n characters. The i-th character is "1", if the i-th lamp is initially on. Otherwise, i-th character is "0".

The i-th of the following n lines contains two integers a_i and b_i ($1 \le a_i, b_i \le 5$) — the parameters of the i-th light.

Output

Print a single integer — the maximum number of lights that will ever be on at the same time.

Examples

input Copy

```
3
101
3 3
3 2
3 1
```

output Copy

```
2
```

input Copy

```
4
1111
3 4
5 2
```

```
3 1
3 2
```

output Copy

```
4
```

input Copy

```
6
011100
5 3
5 5
2 4
3 5
4 2
1 5
```

output Copy

```
6
```

Note

For first example, the lamps' states are shown in the picture above. The largest number of simultaneously on lamps is 2 (e.g. at the moment 2).

In the second example, all lights are initially on. So the answer is 4.