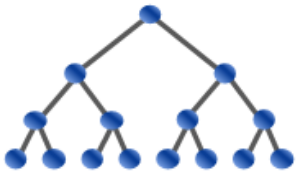

USACO 2016 January Contest, Bronze
Problem 2. Angry Cows

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Contest has ended.

Log in to allow submissions in analysis mode

English (en)

Bessie the cow has designed what she thinks will be the next big hit video game: "Angry Cows". The premise, which she believes is completely original, is that the player shoots a cow with a slingshot into a one-dimensional scene consisting of a set of hay bales located at various points on a number line; the cow lands on a hay bale with sufficient force to cause the bale to explode, which in turn might set of a chain reaction that causes additional nearby hay bales to explode. The goal is to use a single cow to start a chain reaction that detonates as many hay bales as possible.

There are N hay bales located at distinct integer positions $x_1, x_2, \ldots, x_N$ on the number line. If a cow is launched onto a hay bale at position x, this hay bale explodes with a "blast radius" of 1, meaning that any other hay bales within 1 unit of distance are also engulfed by the explosion. These neighboring bales then themselves explode (all simultaneously), each with a blast radius of 2, so these explosions may engulf additional yet-unexploded bales up to 2 units of distance away. In the next time step, these bales also explode (all simultaneously) with blast radius 3. In general, at time t a set of hay bales will explode, each with blast radius t. Bales engulfed by these explosions will themselves explode at time $t+1$ with blast radius $t+1$, and so on.

Please determine the maximum number of hay bales that can explode if a single cow is launched onto the best possible hay bale to start a chain reaction.

INPUT FORMAT (file angry.in):

The first line of input contains N ($1 \leq N \leq 100$). The remaining N lines all contain integers $x_1 \ldots x_N$ (each in the range $0 \ldots 1,000,000,000$).

OUTPUT FORMAT (file angry.out):

Please output the maximum number of hay bales that a single cow can cause to explode.

SAMPLE INPUT:

```
6
8
5
6
13
3
4
```

SAMPLE OUTPUT:

```
5
```

In this example, launching a cow onto the hay bale at position 5 will cause the bales at positions 4 and 6 to explode, each with blast radius 2. These explosions in turn cause the bales at positions 3 and 8 to explode, each with blast radius 3. However, these final explosions are not strong enough to reach the bale at position 13.

Problem credits: Brian Dean

Contest has ended. No further submissions allowed.